American Gas Association MONTHLY

ARTICLES

Gas Industry Gains in 1938

•

Water Heaters for Every Need

•

Gaspects of Hollywood Life

•

A Giant Supports the Gas Load

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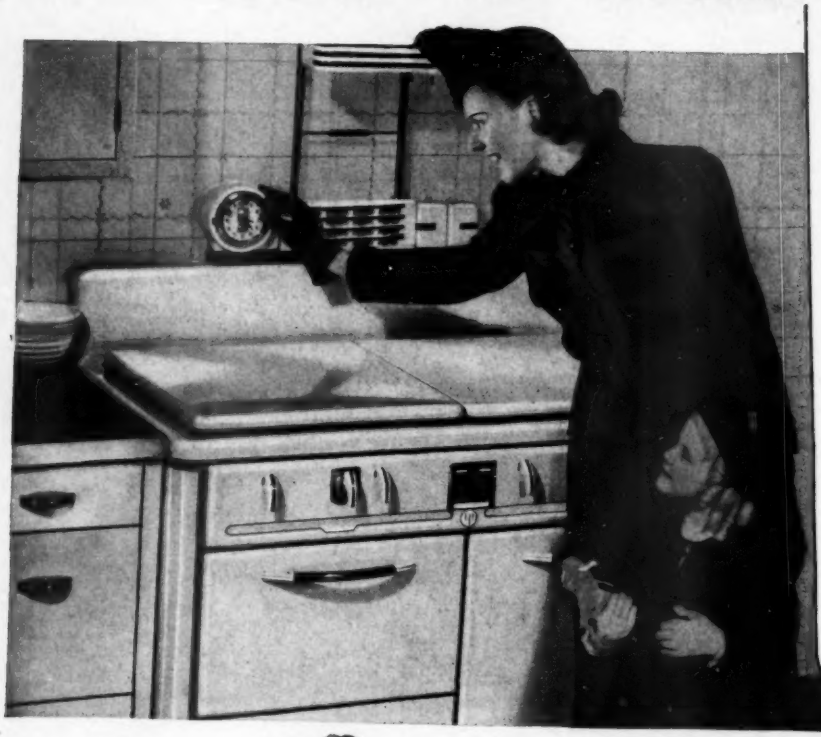
Gas-in-Industry Story Told

January 1939

VOLUME XXI NUMBER 1

AMAZING SELF-TIMING GAS RANGES WIN NEW FREEDOM FOR WOMEN



HERE ARE JUST A FEW of the wonderful time and work saving features you'll find on the modern Gas Ranges. Every housewife should have the benefit of these advantages—you're missing something if you haven't got them!

NOW CHECK THE FEATURES YOU HAVE ON YOUR PRESENT RANGE!

- ☐ **CLICK SIMMER BURNER**—Low economy flame with "click" signal for waterless cooking.
- ☐ **AUTOMATIC LIGHTING** — No matches to strike—No waiting —Instant heat.
- ☐ **GIANT BURNER**—For fastest top-stove cooking. Extra wide heat spread for large utensils.
- ☐ **NEW TYPE TOP BURNERS**—Direct flame toward bottom of utensils —save gas—won't clog
- ☐ **SMOKELESS SPEED BROILER**—Perforated grill keeps fat away from flame. Eliminates smoke.
- ☐ **HEAT CONTROL**—Assures *exact* oven temperature required. No more "guess-work" baking
- ☐ **BALL-BEARING ROLLERS**—Give "finger-tip control" on broiler and utensil compartments.
- ☐ **FAST PRE-HEATING OVEN**—Reaches maximum oven heat in fraction of time required by ordinary ranges.
- ☐ **SLOW-ROASTING OVEN**—Holds minimum heat for "low temperature" cooking. Temperature will not creep up.

NOW BROILING'S EASY. Imagine! A broiler that doesn't smoke. That grills meats almost twice as fast as ever before. That pulls or swings out so there's no hot rack to handle! Just *one* of the wonderful features of the new Gas Ranges — and how you'll love it!

"WHY, *they do the cooking almost by themselves!*" women exclaim when they see the remarkable things an Automatic Gas Range can do. "And they're as far ahead of ordinary ranges as a spanking new car is ahead of the one-hoss shay!"

It's true! Today's Gas Ranges *are* different! You'll find that they practically revolutionize the whole routine of cooking.

Their super-speed cuts down cooking time. The magic clock control... temperature signal... minute minder... heat control—all release you from "stove watching." In fact —the modern Gas Range was specifically designed to give housewives new leisure.

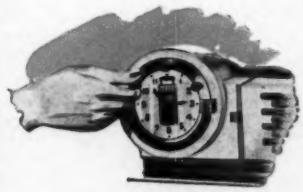
See these wonder-workers as *soon* as you can. Your Gas Company or Appliance Dealer has a variety of models. You won't be able to resist their sleek beauty—their amazing performance.

* * *

AMERICAN GAS ASSOCIATION

THIS SEAL represents the latest developments in cooking equipment. It stands for 22 super-performance standards established by the American Gas Association. Leading gas range manufacturers are now making de luxe ranges that include all 22 features. Such ranges are identified by the CP Seal which signifies "Certified Performance." All modern Gas Ranges have many of these features, in sizes and models to fit every pocketbook.

cp



CLOCK CONTROL. This miraculous device actually turns oven heat on and off while you are away. Put a whole meal in the oven—then leave the kitchen, or even the house, for several hours. When you return your dinner is ready. It's the *last word* in automatic cooking.

LET GAS DO THE 4 BIG JOBS • COOKING • WATER HEATING • REFRIGERATION • HOUSE HEATING

American Gas Association MONTHLY

CONTENTS FOR JANUARY 1939

Don't miss President Lauer's leading article in this issue reporting on the gas industry's progress during the past year. It's a heartening report and we commend it to you for inspiration for the New Year. . . Of especial interest in this issue is the article introducing Hot Water Harry to the industry. He is the forerunner of a nationwide water heater sales campaign which is now being inaugurated by the manufacturers and gas companies. . . The Industrial Giant does a real piece of work in supporting the load curve and merits close attention. Herewith is the first of a series on the industrial phase of our business. . . For Hollywood flavor, we refer you to Deke Houlgate's article. It has it. . . If you've been bothered with a deluge of governmental demands for accounting information, read "Accounting Organization." . . The symbolic photograph on the next page is the work of A. Gordon King, of the A. G. A. staff. He snapped it at Atlantic City during our annual convention last October.

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All Aboard for 1939!

American Gas Association MONTHLY

JAMES M. BEALL, *Editor*

GAS GAINS IN 1938
. . . . Highlights of a Noteworthy Year

By CONRAD N. LAUER

President, American Gas Association

THE year 1938 was one of continued progress and expansion for the gas companies in the United States.

Manufactured and natural gas companies, supplying towns and cities with a population of 81,000,000, served a total of 17,135,000 customers, representing the largest number of consumers ever connected to the mains of the industry, and an increase of 180,000 over the year 1937. Of these, 9,988,000 were served by the manufactured gas industry and the remaining 7,147,000 were served by the natural gas industry.

Preliminary estimates indicate that revenues of the entire industry, both manufactured and natural, aggregated $786,576,000 in 1938, a decrease of 1.8% from the preceding year. The manufactured gas companies grossed $367,714,000, a gain of 2.2% for the year, while revenues of the natural gas companies were $418,862,000 as compared with $441,232,000 in 1937, a decrease of 5.1%.

President Lauer

✣

Sales of manufactured gas for domestic uses, other than house heating, such as cooking, refrigeration, water heating, etc., amounted to 198,331,000,000 cubic feet, an increase of 1.5% for the year. The gain in house heating sales amounted to 10%. This would doubtless have been larger except for the mild temperatures that prevailed throughout the year in most sections of the country. The number of degree days (the gas industry's standard measure of weather conditions) for a number of the larger cities served with manufactured gas, averaged only 3,496 for the first ten months of 1938, or 10.3% less than the figure of 3,897 reported for the corresponding period of 1937.

For somewhat the same reason, the sales of natural gas for domestic uses, which are influenced to a considerable extent by temperature variations, registered a decrease, falling from 359,294,000,000 cubic feet in 1937 to 350,143,000,000 cubic feet in 1938, a loss of 2.5%. For a group of the larger cities served with natural gas, the number of degree days for the first ten months of 1938 averaged only 2,609 or 15.5% less than the 3,088 degree days registered for these cities during the corresponding period of 1937. Sales of manufactured gas for industrial and commercial purposes in 1938, a year of marked industrial recession, were about 1% above the previous year, while industrial sales of natural gas declined 15%.

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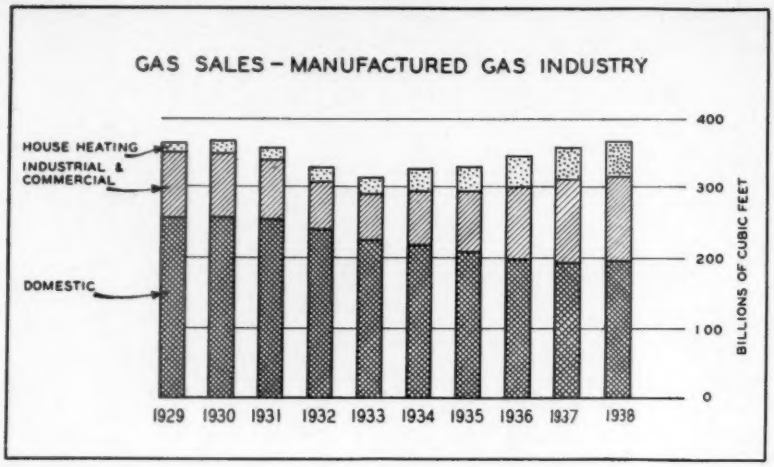
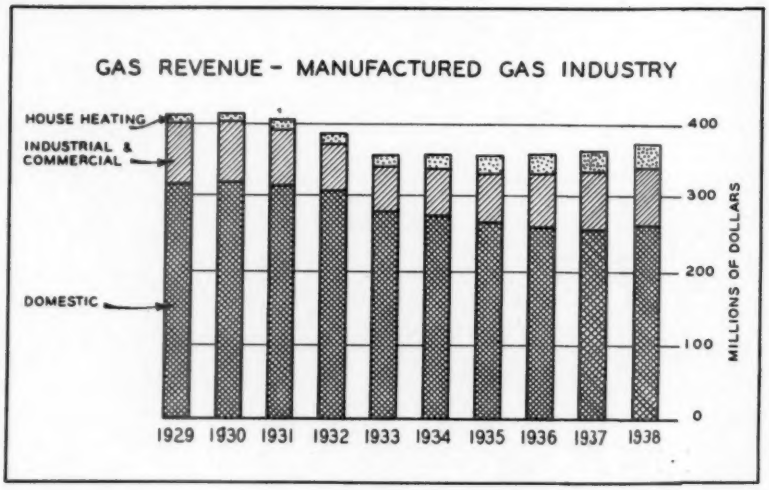
Preliminary estimates indicate that the total production of natural gas in 1938, including amounts used in the manufacture of carbon black and for field purposes, reached an all-time high of more than two and one-half trillion cubic feet, or more than 2 per cent above the previous peak established in 1937. Approximately 173 billion cubic feet of natural gas were used as fuel for generating electric power in 1938. This was an increase of nearly 2% over the previous year.

The sales promotional efforts of the industry toward stimulating the residential use of gas have continued to show a rapid growth. National campaigns on gas ranges, water heaters and refrigerators, tied in with the National Advertising Campaign of the industry, have quickened public appreciation of the value of domestic gas service for the major needs of the home.

During 1938 the industry inaugurated a program for the design, production and sales promotion of a new type domestic gas range with Certified Performance Requirements and adopted a special trade mark for ranges complying with these quality specifications.

More than sixteen range manufacturers are now produc-





ing ranges of this type and the number is growing rapidly.

More than one million gas ranges were sold during 1938 and the industry anticipates increased sales during 1939, with greater emphasis upon these quality cooking appliances.

Gas refrigeration continued to advance its achievements of previous years by again making a better relative sales showing than other types of automatic domestic refrigerators during 1938.

The past two years have been characterized by an increasing appreciation of the great potential market for domestic water heating. There has been a widespread adoption of rates more favorable to the use of gas for this purpose. This has been accompanied by a marked acceleration of local sales effort and a nation-wide coordinated campaign to promote the use of gas for water heating, with the result that more than 680,000 gas water heaters were sold during 1938, and even better results are anticipated from the program of sales promotional efforts to be continued during 1939.

Gas companies have continued to inaugurate more favorable rates for house heating through central plant burners and equipment. It is estimated that the total number of gas central house heating installations connected to the lines of all United States gas companies in 1938 amounted to 825,000. In addition there were approximately 1,400,000 dwellings heated by unit heaters, space heaters, floor furnaces, etc., giving a total of more than 2,225,000 homes in the United States that are heated by gas.

The A. G. A. All-Gas Home program includes an architectural competition for home designs, a builders' competition for the actual construction of all-gas homes, and a demonstration program. This program, inaugurated at a time when the subject of housing is being highly publicized and when building is becoming increasingly active will play an important part in assuring the increased use of gas and gas burning appliances in new and modernized homes during 1939.

The first part of the program—the architects' competition—closed on May 23, 1938 and was an outstanding success. Over 5,000 of the most prominent architects and designers in the United States and the Dominion of Canada registered in this competition and the hundreds of designs of all-gas homes, including separate designs of all-gas kitchens and basements or utility rooms, were highly publicized. Each of the competitors was furnished with definite information and specifications on gas appliances which should result in the increased selection of gas and gas appliances in their future planning and specification activities.

Gas Building Progress

The second part of the program, the builders' competition for the actual construction of all-gas homes, is progressing rapidly, with over 1,400 builders from all parts of the country officially registered in the competition. This contest is open to any builder in the United States or Canada who builds or modernizes a home using gas for the four big jobs from July 31, 1937 to July 31, 1939.

The All-Gas Demonstration Program sponsored by the local utility company is progressing apace with demonstration homes having been built in 16 cities and viewed by several hundred thousand persons. Reports indicate that a considerable number of demonstration homes are planned for construction in the Spring of 1939.

The success of recent national cooperative sales campaigns, sponsored jointly by the gas utilities and the gas appliance manufacturers, has led to more aggressive campaign plans on the four principal domestic uses of gas—cooking, refrigeration, water heating and home heating during 1939. Closer coordination is being accomplished between these new campaigns and the industry's National Advertising Program, as well as the national sales programs of the individual gas appliance manufacturers.

The growth of acceptance of these national movements by gas companies insures their more effective use locally. Under the influence of all these factors, it is anticipated that the average annual consumption of gas per residential customer will assume substantially higher levels during the next few years, without considering the marked increases in the sale of gas for home heating.

The sale of non-residential gas for various industrial and commercial applications has increased steadily in recent years. The value of a clean, flexible fuel that can be burned and controlled automatically within close limits is more fully recognized now than formerly. From a technical standpoint, industrial gas is penetrating new heating operations each year. For instance, industrial summer air conditioning by gas has been found to have certain qualities that are especially applicable to manufacturing operations in such fields as pharmaceuticals, safety glass, fish drying, high grade printing, film manufacture and chemical production. Gas summer air conditioning has also been successfully applied to large stores, shops, offices, theatres, etc.

The use of gas engines in certain natural gas territories is growing steadily. The economy and flexibility of power generated in this manner appeals to many users.

Advertising Expanded

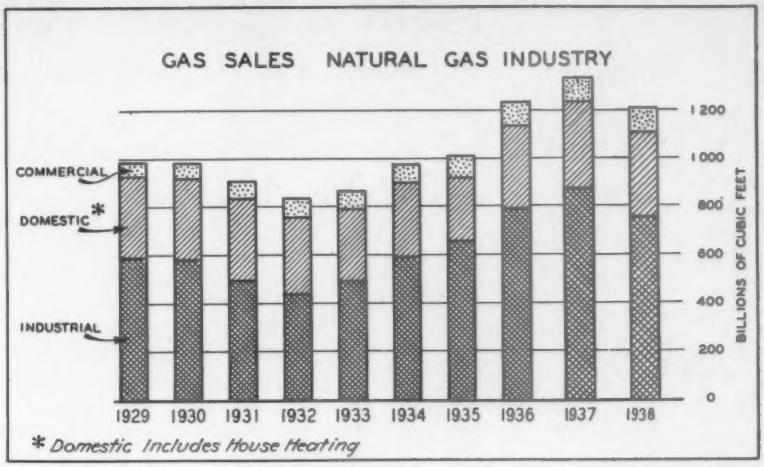
Demonstrating its confidence in the business future, the Association's Executive Board, nine months in advance of the termination of the gas industry's three-year $1,500,000 campaign of national cooperative advertising, approved a three-year extension of this campaign, starting in July 1939. A movement is now underway to increase by 50% the advertising budget for the new three-year term.

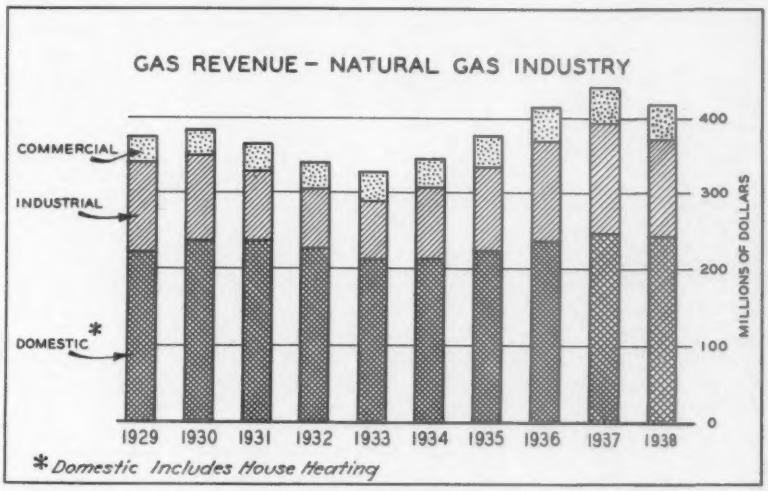
Financed by 708 operating gas and gas and electric compaines, the campaign has brought about a larger volume of national advertising by gas appliance manufacturers and has materially increased both the quantity and quality of local company and dealer newspaper advertising, including many special newspaper sections devoted exclusively to the promotion of the latest models of gas appliances.

With more than 2,000,000 copies of the Mystery Chef recipe book called for in person at the offices of Eastern and Pacific Coast companies, the radio program which offers this book in connection with practical talks on gas cooking and home making is now being suggested for extension on coast-to-coast network facilities for 1939-40.

The gas industry will be appropriately represented at the New York 1939 World's Fair and the Golden Gate International Exposition. The industry will have its own building and exhibit at the New York Fair and one of the outstanding features will be the largest and most spectacular gas flame ever created by man. The building is 90% completed. Companies on the Pacific Coast are sponsoring an exhibit occupying some 10,000 square feet of space at the Golden Gate Fair.

Gas fuel and gas appliances are being used almost exclusively in both expositions for heating, cooking, water heating and for special street lighting and pyrotechnics. To insure adequate gas service at the New York Fair, the distribution system has been set up to handle a maximum hourly demand for gas fuel more than four times as much as that required for the Century of Progress Exposition in Chicago during 1933-34.





Gas Lighting Society Elects Officers

AT the annual business meeting and Christmas dinner of the Society of Gas Lighting, December 8, the following officers were elected for the year 1939:

President—James F. Hunter, assistant to vice-president, Consolidated Edison Co. of New York, Inc.; Vice-President—George S. Hawley, president, The Bridgeport Gas Light Co., Bridgeport, Conn.; Treasurer—Herbert C. Davidson, vice-president, Consolidated Edison Co. of New York, Inc.; and Secretary—Oliver H. Smith, assistant engineer of production, Consolidated Edison Co. of New York, Inc.

An article by **JOSEPH E. POGUE** *treats the natural gas industry as a growing, living, economic organism engaged in doing a job.*

Natural Gas . . . *an Industry with a Future and Responsibilities*

THE natural gas industry is still a relatively young industry and consequently faces the opportunity for additional expansion. It deals with a commodity whose distinguishing mark of value is derived from its form—that of energy in a natural gaseous state bound up with chemical potentialities. It is an integrated industry, linked with oil at the source, highly competitive in production, semi-competitive in transmission, and quasi-competitive in distribution to the consumer.

Its price in the sector of domestic consumption is regulated by utility commissions, though free to express itself more competitively in respect to industrial consumption; and its movement in interstate commerce has just now come under the jurisdiction of the Federal Power Commission. Its production is subject to the conservation laws of the various states in which it occurs.

Responsibilities

The responsiblities of the natural gas industry center in the conservation of the resource and the furtherance of efficiency and growth in its utilization; likewise in so shaping its relationship with the various regulatory bodies supervising it that a dynamic trend may be sustained. An industry may be regarded as an economic organism that faces the continuing task of adapting itself to a changing environment and both corporate and social managements have common objectives if clearly envisioned.

Natural gas represents energy in highly useful form and this characteristic has determined the economic structure of the industry. The natural occurrence of an energy resource in the gaseous state creates unique problems in connection with its production; induces a specialized, economical, and large-scale type of transportation; and facilitates its utilization in competition with other fuels of inferior utilty.

The occurrence of natural gas is analogous to petroleum and the natural gas industry, therefore, shares with the petroleum industry a common technique of production and derives from the petroleum industry many of the economic procedures that have evolved pertaining to proration and conservation. Natural gas has usually been discovered in connection with the search for oil and future supplies are likely to be progressively tied in with oil production, as deeper horizons are uncovered by the drill.

Unlike petroleum, natural gas does not have to be processed before use, other than to be subjected to the extraction of impurities and by-products, and hence, once produced, there remains merely a space-gap to be bridged to connect this resource with markets. The trunk pipe line supplies this link and great economies are gained when the gas can be gathered and handled in large volume through modern high-pressure lines.

Technological Factors

Improvements in pipe and in pipe line construction have been technological factors of great importance while the discovery of enormous gas fields in a few localities has furthered the development of a nation-wide system of transportation facilities. Even now most of our large cities, with the exception of those on the Eastern Seaboard and the Pacific Northwest are served with natural gas; and the reserve, properly marshalled, holds the potentiality of filling many of these gaps. As time goes on, the problem of sustaining a continuity of supply will involve the tapping of successively smaller and more widely scattered sources, the coordination of which will involve large-scale efforts, perhaps progressively tied in with chemical processes as an adjunct.

At the service end, the form value of natural gas assures a market in competition with other sources of heat and power, for alternative supplies are inferior in utility, having either to be subjected to expensive processing or else possessing a lower thermal value.

Although the ideal fuel for home heating and for highly specialized industrial utilization, the seasonal variations in domestic consumption are so great that, in the intrinsic absence of large-scale storabilty, a compensating industrial load must be established to equalize the takings and permit efficient utilization of transportation facilities. But in certain favored sections,

Joseph E. Pogue

MR. POGUE has been closely identified with the natural gas and petroleum industries for many years. He was elected a vice-president of The Chase National Bank of New York City in 1936 and his work has continued to be in the field of gas and petroleum economics. He is the author of "The Economics of Petroleum," co-author of "America's Power Resources" and has contributed many articles to scientific and industrial publications. In April of last year he was appointed a member of an Advisory Committee on Economics to the Interstate Oil Compact Commission. His views on the natural gas industry carry the weight of exceptional experience.

Presented at A. G. A. Convention, Atlantic City, N. J., October 13, 1938.

The writer is indebted to Lyon F. Terry, Department of Petroleum Economics, The Chase National Bank, for assistance in the preparation of this paper.

the peak-load problem has been partially solved by underground storage in depleted gas fields where such are available close to the market.

During the past thirty years the marketed production of natural gas in the United States has increased from 0.41 trillion cubic feet in 1907 to 2.37 trillion cubic feet in 1937, nearly a six-fold expansion. During the same time-span the output of crude petroleum in this country has grown from 166 million barrels in 1907 to 1,278 million barrels in 1937, a multiplication almost eight-fold. Thus the natural gas industry has trailed the petroleum industry in rate of growth, although in the past ten years the pace of natural gas has forged slightly ahead of that of petroleum.

Rapid Growth

The rapid growth of natural gas consumption is suggestive of an industry still in a vigorous and youthful state of expansion. This conclusion is supported by large gas reserves, markets developed and retained in spite of keen competition, a low labor component in operating costs, and the lack of adverse technologic change. The vitality of the natural gas business is in striking contrast to the decadence of anthracite coal or the street railways. It is remarkable even in comparison with the rapidly growing automobile and steel industries.

The expansion of the natural gas industry is exemplified by the rise in its volume to a 1937 level 24 per cent in excess of that reached in 1929, the dampening effect of the intervening depression having been overcome and surmounted. Should natural gas fail to continue in its favorable trend of expansion, in all probability the cause will be beyond the control of the industry. The reason might be far reaching technological developments not yet discernible on the horizon, a decadence of industry in general, or the consequence of unnatural rigidities introduced into its economic structure such as might eventuate from unwise regulation or excessive taxation.

In a resource industry, much attention is attracted to periodic estimates of proven reserves, without too close notice of the qualification that such measures can quantitatively take into account only the portions that have been blocked out and hence reduced to more or less exact knowledge. As in the case of oil, so with natural gas, the conventionally indicated reserve is in the nature of a working inventory, constantly affected by depletion, on the one hand, and accretions from new discoveries, on the other. The ultimate reserve is an entirely different matter and cannot be scientifically measured or even approximately predicted. The art and science of oil and gas search have been revolutionized and the third dimension, depth, has been extended to almost three miles, with the end not yet in sight. In the past ten years maximum depths attainable by the drill have approximately doubled.

Adequacy of Supply

The known *proven* reserves of natural gas in the United States are believed by the best authorities to be in the neighborhood of 60 to 75 trillion cubic feet, or, say, 25 to 30 years' supply at the current rate of consumption. Even with this back-log, however, the continued discovery of new reserves is a fundamental requirement of the industry.

That such extensions of the known supply are possible for a sustained period is beyond reasonable question, for even were the incentive lacking in respect to gas, the active exploration for petroleum is bound to continue to uncover enormous gas potentialities, particularly in light of the fact that the penetration of greater and greater depths in the development of oil fields reveals increasing proportions of gas by reason of the high pressures prevailing and the tendency of the lighter hydrocarbons to occur at greater depths.

The practical problem, accordingly, for some time to come is more likely to be one of developing markets for new supplies than that of creating additional stimuli for search, although there are conditions under which the supply factors for both oil and gas might be retarded. But not merely is there a problem of inducing proper employment of capital to maintain a dynamic balance between supply and demand in an over-all sense, but a fitting together of the various segments of a shifting supply, following the scene of oil exploration, will tax the talents of the ingenious.

Conservation and Proration

In the petroleum industry, a condition of divided ownership of oil fields and the growth of modern technology —the one forcing developments in a race against off-set wells and the other facilitating the discovery of new fields —have rendered the unregulated output of crude petroleum untenable, both on the score of waste and as conducive to uneconomic conditions of supply. Hence there has developed in the United States a system of ratable takings within the single oil pool and of scheduled allocation between areas, designed to prevent the hasty removal of the reserve and to create an approximate balance between supply and demand.

This scheme of operations, broadly called proration, is really based upon the inherent desirability of operating oil wells under back pressure, in order to insure maximum utilization of reservoir energy. The procedure is still in a youthful state and is not yet adequately implimented, but the natural gas industry is coming more and more under the influence of these developments. The states have jurisdiction over such matters, and the natural gas industry will doubtless find it expedient to support and promote state-directed measures designed to prevent waste, to improve the efficiency of extraction, and to preserve the equities, or correlative rights, of the various leaseholders.

The conservation of oil and gas is a matter of mutual interest to the two industries concerned and it may be expected that society will demand increasing efforts to this end. The matter is not simple, for a practical balance must be sought between efforts that do not unduly hamper growth and those that aim at unattainable perfection. The existing trend, however, is in the right direction, although it may be doubted if the natural gas industry has yet exhausted the full range of its talents in furthering these objectives.

The needs in this field are believed to be: the standardization and improvement of state conservation laws; the firm establishment of the principle of ratable takings; and the broadening of the scope of the Interstate Oil Compact to act as a clearing house for the coordination and application of the fine body of technology that is so rapidly being built up.

Regulation

In the course of its evolution, the natural gas industry has come under the influence of an increasing degree of regulation on the part of the representatives of society. There are now three phases of regulation: that of state utilty commissions in respect to the terms of distribution to the domestic consumer; that of state conservation bodies in respect to the manner in which natural gas is produced; and, finally, that of the Federal Power Commission as regards the movement of the commodity in interstate commerce.

The development of the application of regulation has proceeded in the order named: first, the field of distribution; second, the field of production; and third, the field of interstate transportation. Different and unrelated bodies have jurisdiction over these three phases. Two sets of these bodies have the benefits of considerable experience; the third is new, having been empowered by the so-called Natural Gas Act which was passed by the Congress in June, 1938.

The important oil and gas producing states have laws for the conservation of these products, which in practically all instances, both as to terms and application, are more perfected in respect to oil than to gas. The state utility commissions have been at their work for several decades, and a great mass of procedure has been developed and tested by the courts. But a coordinating theme has been lacking from the outset, and it is unfortunate that an Interstate Utility Compact had not been developed to bring about higher and more constructive standards of practice in this highly technical and complex field.

Lastly, the phase of interstate regulation has just now been initiated and its record lies ahead. The steps to be taken will have much to do with the future course of the industry. The Natural Gas Act authorizes the Federal Power Commission to regulate the operations, the accounting and depreciation practices, and the rates and charges of companies transporting natural gas in interstate and foreign commerce. Prices charged for such gas are required to be just, reasonable, and without preference or discrimination. The Act declares it to be the intention of Congress that natural gas shall be sold in interstate commerce for resale to ultimate domestic, commercial, or industrial customers at the lowest possible reasonable rate.

Running through these three phases of regulation there may be seen to be but two types or principles: regulation for the purpose of preventing waste, confined as a practical matter to the extraction of the commodity from the ground; and regulation of rates, for the purpose of protecting the interests of the consumer against unreasonable burdens, in the absence of fully competitive conditions that could be counted upon to provide these safeguards automatically.

Though long existent, conservation regulation has recently come into greater prominence coincident with growing application of this principle by the petroleum industry. Laws designed to induce greater efficiency in production are essential so long as oil and gas reservoirs are owned by diverse operators, who are forced by the prevailing rule of capture to protect their own property from cross drainage. A restraining influence is therefore necessary to permit orderly extraction without impairment of equities—and hence ratable takings as a conservator of correlative rights has come to be a firmly established principle in oil production and is fast becoming equally recognized in gas.

While conservation regulations deal primarily with physical matters in production, the second type of regulation, that having to do primarily with rates, is usually considered as confined to the economic field, although, upon reflection, this concept is seen to be too narrow. Rate regulation is a vastly complex matter, with a voluminous literature, but our approach may be simplified if we attempt to answer a few questions: What are the reasons for the development of rate regulation? What are the usual objectives of rate regulation? On what basis are rate regulations customarily established? And what concepts would be necessary to turn what has often proven to be a negative procedure into a creative mechanism?

The reason for the establishment of rate regulation is simple: The proce-

(Continued on page 38)

A Story Well Told

HOW to tell the story of a utility company in a simple, forthright manner that will earn for the company a larger measure of understanding and appreciation, is a problem that has caused many an executive headache. The literature so prepared ranges all the way from a cold-blooded mimeographed statement of earnings to elaborately illustrated portfolios.

Occasionally, but not often enough, someone comes along who is brave enough to disentangle himself from the traditional practices of the past and do the job as it should be done. Such a person is Herman Russell, President of the Rochester Gas & Electric Corporation, and past President of the American Gas Association.

Herman Russell

Under the title, "A Utility's Responsibilities—Are We Meeting Them?" Mr. Russell uses ten pages of his company's house-organ, the Rochester Gas & Electric News for November 1938, to give an accounting of his company's operations. In the belief that persons who read the story want facts without any fancy dressings, Mr. Russell comes to his point immediately in the first two paragraphs by defining the four great responsibilities of his company, namely, security holders, customers, employees and the community. He develops each of these topics individually, and therein lies the trick of telling the story directly and completely.

No history of the company appears in the report. A listing of contributions to local community activities is given in detail. Rates, taxes, employee wages and pension funds and the financial setup of the company are all explained in simple terminology. The text matter is broken by charts which doubly emphasize the importance of the factual material.

The story comes to a close with this observation, "So I submit that the Company has taken good care of three of its responsibilities—community, employee and customer—and has done a good job for the tax collector, but has not been so successful in looking after the stockholders' interest."

Modern Gas Water Heaters for Every Need

WATER heaters and the science of heating water for domestic and commercial purposes are well advanced. Probably no phase of our domestic appliance field has had better engineering talent nor has created better sales tools for its merchandising people than water heating. Since a water heater is generally a basement appliance and is not so intimately used as, for example, a gas range, its popularity has perhaps suffered a partial eclipse by other equipment. The purpose of this article is an attempt to generate more enthusiasm and to develop a greater consciousness of just what this appliance offers in the way of a modern and essential gas service.

Myriad Types of Heaters

The striking thing about water heaters is the almost infinite number of sizes and types in which they are manufactured. To the uninitiated it might seem that the variety was needless and only indicated a confusion of methods in arriving at a given objective, but a little study soon reveals that the variations in service requirements are just about as great as, if not greater than, the variations in water heaters. A further study soon develops the fact that the heaters and service requirements match with little overlapping one way or another. In other words, it might be said that the gas industry offers a water heater specifically designed and engineered for any conceivable domestic and commercial water heating service.

The easiest differentiation to make between the myriad types of water heaters is the kind of control, manual and automatic. Manual heaters, that is, the types on which a manual operation is required to turn on or off the gas supply, are typified by the common coil type circulating tank heater as well as the underfired storage type.

The former type is generally connected to an uninsulated range boiler while the latter may be employed as a unit. Both under properly supervised operation are capable of producing adequate quantities of hot water economically. They have the disadvantages of requiring personal attendance for suitable control of hot water production.

F. R. Wright

THIS article by F. R. Wright, of the American Gas Association Testing Laboratories, undoubtedly tells in large part an old story to those in the gas industry actively engaged in the water heating field. The fact remains that there are many both within and outside of the industry who have not kept pace with the development of modern streamlined gas water heating equipment. It is for those people that this article has been written. It is suggested that reprints be made available to employees, dealers and prospective customers.

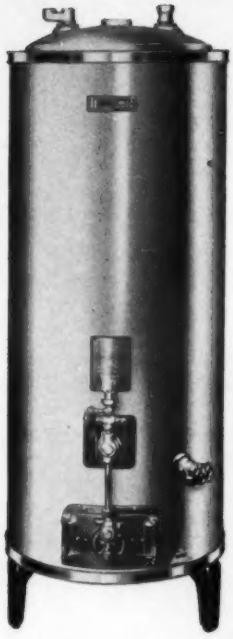
Manual type circulating tank heaters are supplied having an extremely wide range of heat inputs, namely, approximately 19,000 to 400,000 B.t.u. per hour, the larger sizes (above about 85,000 B.t.u. per hour) being known as multicoil or multiflue heaters and suitable for use in very large homes, apartment houses, hotels and other commercial applications. The smaller sizes find use in all types of domestic installations. The non-automatic storage type heaters are manufactured in storage vessel sizes of from 12 to 100 gallons and have input rates ranging from 18,000 to 75,000 B.t.u. per hour.

The transition from manual to automatic heaters is not sudden in the gas industry. For example, mention may be made of the so-called upstairs controls by which the gas to a heater located in the basement may be turned off or on from a convenient position in the living quarters. Also there are available package sets consisting of thermostat, safety pilot, and insulating blanket with which a manual uninsulated gas water heating system may be converted to an automatic insulated heater. These may be considered as developments leading up to the fully automatic type.

Automatic Service

Automatic water heaters, regardless of type, are capable of delivering at any time a definite quantity of hot water at or near a predetermined temperature. These heaters may logically be classified according to three general types, namely, storage, instantaneous, and conversion. Of these, the automatic storage heater is the most widely known at the present time. It has been adapted for every type of domestic service and many kinds of commercial usage as indicated by the fact that such heaters have storage vessel capacities ranging from 12 to 150 gallons and input rates varying from 2,000 to 100,000 B.t.u. per hour. A common type of automatic storage heater is the side arm which is a tailor-made application of the circulating tank-range boiler combination, insulated and converted to automatic operation as mentioned above.

The other principal type of automatic storage heater is the underfired model, in which the combustion chamber and storage vessel are an integral unit. Underfired automatic storage heaters may be further segregated into the internal flue type, including the vertical center pipe flue and revertible (hairpin or U) flue, and the external flue type frequently termed the "teakettle" heater. The automatic storage water heater has found considerable favor, probably as a result of providing economical and adequate hot water service in an appliance with eye appeal at a comparatively low initial cost.

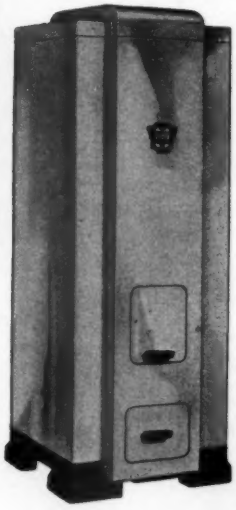


A more interesting differentiation between automatic storage water heaters may be made on the basis of the type of service for which they are designed. The quick recovery is, as the name implies, an automatic storage heater having a relatively high input rate. The low recovery or limited demand storage heater is obviously one having a relatively low input rate.

The line of demarcation between these types is not clear-cut but has in some instances been arbitrarily set at 15,000 B.t.u. per hour. From the standpoint of the consumer, at least, the relationship between input rate and recovery is relative since a 15,000 B.t.u. input heater may as adequately fulfill the hot water requirements of a small family as a 25,000 B.t.u. heater will meet those of a larger family in better circumstances. In spite of this, the distinction between quick and low recovery heaters is definite and their relative merits have been the subject of much discussion.

It has been said that the low recovery heater is a source of complaint in some instances due to limited hot water production or to condensation troubles resulting from low total heat content of the flue gases (low flue temperature and small flue gas volume). Others have felt that the low recovery heater tended to educate gas consumers to a type of hot water service which could be more readily duplicated by competitive fuels than could the much more flexible service rendered by quick recovery gas water heaters.

While it is not intended to dismiss these contentions as being entirely without foundation in certain instances, there seems to be sufficient evidence that a properly designed and installed low recovery heater fills a definite need in our water heating program. For example, this type of heater has made possible flat rate or guaranteed bill promotional activities by utilities, such activities being imperative as a result of efforts along similar lines by competitive fuels.

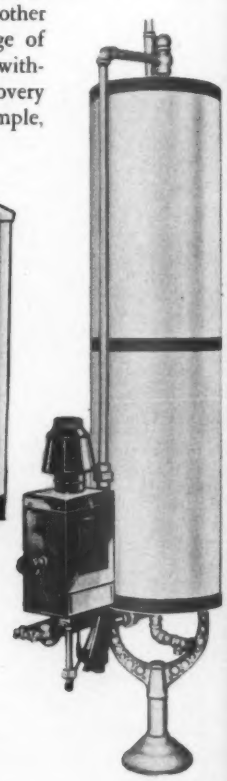


Again, automatic appliances having input rates of less than 5,000 B.t.u. per hour and equipped with devices to prevent the escape of unburned gas are exempted from being flue connected by the A. G. A. Requirements for House Piping and Appliance Installation as well as by certain municipal gas ordinances or building codes. Thus, in many installations where a flue connection could not be made for one reason or another, the low recovery heater becomes the only feasible type of automatic gas-fired hot water service.

An interesting form of the automatic storage heater is the convertible or adjustable recovery type which is one on which the input rate can be changed to provide predetermined variations in maximum recovery capacity. Some types are equipped, for example, with two burners, one of which can be employed by the customer for ordinary demands. The second burner is available for manual use by the consumer to meet extra demands for service. Other types of the convertible heater require changes in burners or flues or both to provide the design variations in input rate.

Input Rates Vary

Such heaters must be adjusted by a gas company fitter or one equally qualified. The arrangements on certain convertible heaters are such as to permit as many as five different input rates. The rates may vary from the low recovery range (as low as 3,000 B.t.u. per hour) to the medium recovery range (in the neighborhood of 15,000 B.t.u. per hour) or to the quick recovery range (as high as 32,000 B.t.u. per hour). On other types the range of inputs may be within the low recovery range, for example,



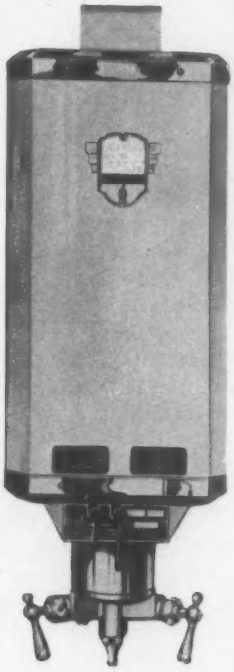
from 2,000 to 5,000 B.t.u. per hour.

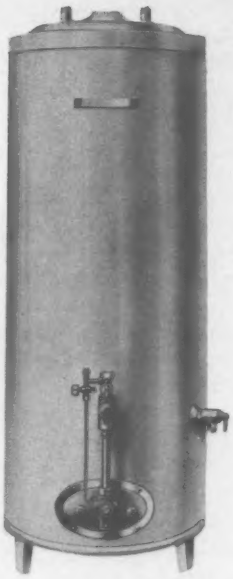
The instantaneous type of automatic gas water heater is a venerable member of the family, and while displaced to some extent by the popularity of the storage heater may fulfill certain requirements to better advantage than other types. Special applications requiring intermittent use but rather large demands at time of usage are handled very satisfactorily by instantaneous heaters.

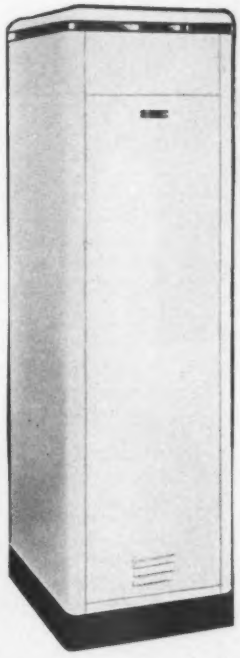
Instantaneous Heaters

Examples of this type of service may be found in churches, auditoriums, ball parks, and gymnasiums. Tempering water for car washing in garages is another type of service for which the instantaneous heater is well fitted. Moreover, in many communities this type of heater finds considerable favor for domestic installation. Input rates vary from 30,000 to nearly 300,000 B.t.u. per hour. The lower rates are found on the faucet type heaters (also known as sink or cottage heaters) which are installed at the point of usage.

The conversion type automatic water heater (not to be confused with the convertible or adjustable recovery storage heater) is manufactured in two principal types. The first is the automatic circulating tank type which is similar to the conventional circulating tank heater but differs from it in that it is equipped with a thermostat and safety pilot and is generally insulated. The automatic circulating tank heater must also be connected to a range boiler and on such installations the range boiler is usually insulated.







The usefulness of this unit is its ability to provide economical and automatic hot water service with a relatively small outlay for the equipment. Where the customer has an expensive non-ferrous range boiler, an automatic circulating tank heater may thus offer interesting possibilities. Such heaters may be obtained in different sizes having input rates varying from 2,500 to 38,000 B.t.u. per hour.

Another type of conversion unit is that which has no water-carrying parts such as the coils of a circulating tank heater. In this type, heat is transferred from the flame and flue gases by radiation and convection directly to the exterior surface of the range boiler with which the conversion unit is used. It is said that this type may be more readily installed under certain conditions than the automatic circulating tank heater due to the absence of water connections. Conversion units without water-carrying parts are now manufactured with input rates ranging from 4,000 to 9,500 B.t.u. per hour.

The foregoing is, considering the real complexity of the picture, an extremely brief resumé of what the gas water heater manufacturer has provided to the industry. Comparing it with the meager offerings of the electric, oil, or coal industry it seems that the gas industry is indeed well equipped not only to maintain its water heating load but to increase it materially in the future. As an indication of how much better equipped it now is than even a few years ago, new or relatively recent developments will be briefly reviewed.

The extensions of available styles and models of gas water heaters to meet more adequately certain specific requirements have been numerous.

For example, statistics are available showing that thousands of homes in this country have gas service (primarily for the range) but no hot water piping.

The faucet heater, of recent development, has opened up a considerable but previously unattainable market here. The conversion heater has permitted offering automatic hot water service to consumers who previously had refused the step on grounds of high initial cost. The low recovery heater, as previously indicated, has secured on a guaranteed bill basis, business which otherwise might have been lost. Convertible storage heaters expand opportunities and give confidence to sales departments by making possible a ready adjustment on the premises of recovery to meet the hot water needs which, in some instances, can only be approximated beforehand.

Thermal Efficiencies Improved

Thermal efficiencies on all types of water heaters have been very appreciably improved in recent years, a conservative estimate being a 10% average increase in the last three years. Safety pilot operation has become faster and more positive. Thermostats are trouble-free. Instantaneous heaters by use of improved heating surfaces have been freed from condensation difficulties and give equal capacities with a very considerable reduction in weight.

Many steps have been taken to minimize or eliminate tank corrosion, which incidentally is a problem common to all water heaters but probably to a lesser degree with automatic gas-fired types than most competitive fuel types. For example, high stored water temperatures, conducive to corrosion, must be carried on certain types of electric water heaters to provide adequate recovery, and cannot be avoided at times with many types of oil or coal fired installations.

A most important development has been the modernization of gas water heater appearance. The appearance of the tank heater, in the past kindly termed utilitarian, has been considerably improved and can now be considered attractive, or as indicated by some catalogs, streamlined. The conventional automatic storage heater, too, has been streamlined, the controls disguised or placed more in harmony with the ensemble, and the whole adorned with a pleasing finish.

More outstanding has been the enclosure of automatic storage water heaters in modernistic cabinets. The cabinet type fits in perfectly with the playroom basement or the kitchen. Another kitchen model is the table top, the top surface of which makes an excellent work surface and thus compensates for the space required by the heater.

With all this development and improvement there is no evidence that the water heater manufacturers are resting on their achievements. On the contrary a very progressive atti-

(Continued on page 39)

C. F. deMey Named Chairman of Rate Committee

C. F. deMey

APPOINTMENT of C. F. deMey, rate engineer of the Columbia Engineering Corporation, Columbus, Ohio, as chairman of the Rate Committee of the American Gas Association has been announced by Conrad N. Lauer, president of the Association. Wide experience in the development of rate structures and the presentation of rate cases qualify Mr. deMey for the leadership of this important committee of the Association.

Other members of the committee, as announced by President Lauer, are: H. H. Agee, Public Service Electric & Gas Co., Newark, N. J.; Frederick C. Beck, United Gas Pipe Line Company, Houston, Texas; I. L. Craig, Philadelphia Electric Co., Philadelphia, Pa.; C. G. Eichelberger, Cincinnati Gas & Electric Co., Cincinnati, Ohio; C. L. Follmer, Consolidated Gas, Electric Light & Power Co., Baltimore, Md.; R. E. Ginna, Rochester Gas & Electric Corp., Rochester, N. Y.; H. D. Hancock, Gas Advisors, Inc., New York, N. Y.; Donald A. Henry, Stone & Webster Service Corp., New York, N. Y.; A. Gordon King, American Gas Association, New York, N. Y.; R. H. Knowlton, The Connecticut Light & Power Co., Hartford, Conn.; S. S. Mason, Washington Gas Light Co., Washington, D. C.; F. X. Mettenet, The Peoples Gas Light & Coke Co., Chicago, Ill.; F. A. Newton, The Commonwealth & Southern Corp., New York, N. Y.; A. I. Phillips, South Orange, N. J.; Robb Quinby, The Brooklyn Union Gas Co., Brooklyn, N. Y.; R. E. Ramsay, United Gas Improvement Co., Philadelphia, Pa.; Charles S. Reed, Duke Power Co., Charlotte, N. C.; E. N. Strait, Public Utility Engineering & Service Corp., Chicago, Ill.; F. M. Terry, Consolidated Edison Co. of New York, Inc., New York, N. Y.; G. I. Vincent, Central New York Power Corp., Syracuse, N. Y.; R. P. Wagner, New York Power & Light Corp., Albany, N. Y.; Kurwin R. Boyes, secretary, American Gas Association, New York, N. Y.

Born in Louisville, Kentucky, Mr. deMey made his debut in the utility business with the Louisville Gas and Electric Company during summer vacations when attending high school. He graduated from the University of Kentucky in mechanical engineering. After a few years spent with the General Electric Company and the Hudson Coal Company in electric station design and construction, he was employed by the Central Hudson gas and Electric Corporation, Poughkeepsie, N. Y.

He joined the Columbia Engineering Corporation in 1929 as rate engineer. Since then he has been engaged in the development of the Columbia System rate structure and in the presentation of rate cases, as well as other related problems.

Organized 19 Years

Now beginning its nineteenth year, the Rate Committee was formed in 1920 when the Executive Board authorized George B. Cortelyou, then president of the Association, to appoint a committee on "Methods of Charging for Gas." Its duties as established by the Board, are: "To make and present studies and recommendations to the gas industry on all phases of rate-making and rates, including the fundamental basis for determining proper rate levels; the structures, forms and types of rates which should prove most equitable to the utilities and their customers, and at the same time promote most effectively the use of gas, and any other matters having a direct bearing on gas utility rates."

A long line of authoritative reports has been made by this committee and is now a part of the Association's printed Proceedings.

Hot Water Harry . . .
Salutes You with Many New Sales Aids

By JOHN W. CLARK

Chairman, Water Heating Committee

John W. Clark

THE Water Heating Committee is out to dramatize the benefits of automatic gas water heating, not only to the Customer, but to the Gas Utility and to the Plumber-Dealer.

Just before this issue of the MONTHLY reaches you, the executives of every gas utility will have received a brochure entitled "Seven Lean Years," which convincingly demonstrates the necessity of the water heating load to the utility. It also presents the essentials of what must be done to secure this business, as well as brief outlines of six successful water heater sales plans.

Tested Selling Mediums

About January 20 the Plan Book setting forth the program in detail will be mailed to the industry. This program is aimed at the ultimate consumer. It includes every tested medium for securing his interest and paves the way for a clean-up by the sales organization.

A new character is introduced by the gas industry. "Hot Water Harry," your twenty-four hour servant, comes to the rescue to furnish hot water to the average home one hundred and fifty times a day, for health, beauty and convenience. This novel character and theme is carried through all the newspaper advertising, direct mail, bill stuffers, window displays, show room banners, window cut-outs, car cards and an attention-compelling twenty-four sheet poster.

Due to the fact that the water heater manufacturers have assumed the burden of the preparation of this material, the cost to the utility is lower than that of any similar material ever offered. A gas utility with 10,000 domestic meters will be able to purchase all the material necessary for a well-rounded Spring campaign for $99.60.

Every newspaper advertisement, as well as the colorful direct mailing piece and the bill stuffer, have generous space set aside for imprinting the individual utility company offer to its customers. It was a thought of the committee, that in order for any water heater advertising to be truly effective, it must include an attractive offer to the reader to bring home the fact that the acquisition of an automatic gas water heater is by no means a major financial operation.

Today many customers are offered a free trial, trial rental, long term purchase or similar plans, so that the customer may learn the benefits of automatic gas water heating at first hand in his own home without assuming any large and binding financial obligation.

The committee felt that each utility would wish to include the essence of such an offer in the direct mailing piece and in the bill stuffer. Imprinting costs have been kept to a minimum so as to encourage this feature.

Twenty-eight thousand plumber-dealers will receive a promotional plan built around the profit to be derived from water heater sales and installations, and they, too, will have the same advertising material made available to them at the same low prices.

Thirteen thousand copies of an up-to-date "Architects Manual on Gas Water Heating," written by a well-known architect, will go to five thousand architects and eight thousand builders.

During the month of August, the committee will distribute a Secondary Plan Book for a follow-up fall campaign, such as is included in the sales program of many aggressive utilities. This plan book will present new advertising material for the Fall campaign.

Prize Essay Contests

Two important items of the 1939 program are the Prize Essay Contests, one for utility employees and one for dealers. The prizes are duplicated for each of these essay contests and consist of: first prize, $500; second prize, $250; third prize, $150; fourth prize, $100; or a total of $2,000 in prize money.

The Utility Contest will be open to every gas company employee. The subject will be "The Value of the Water Heating Load and How It May Be

(Continued on page 39)

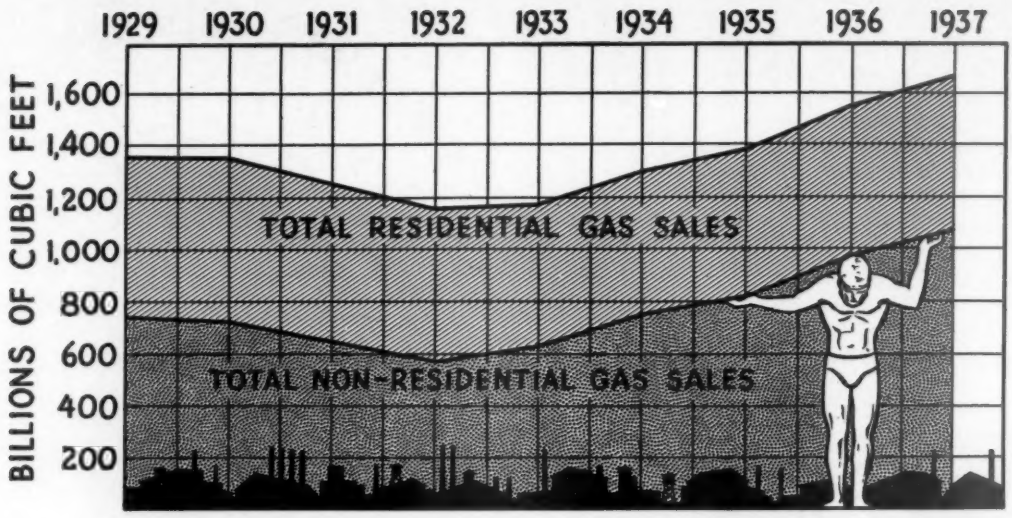


Chart 1—Actual reported residential and non-residential gas sales. (Data taken from A. G. A. Statistical Department)

The Industrial Giant... *Supports the Gas Industry Send-Out Curve*

F. H. Trembly, Jr.

By Frank H. Trembly, Jr.
Chairman, Industrial Gas Section

Frank H. Trembly, Jr., assistant sales manager, The Philadelphia Gas Works Company, knows whereof he speaks in the fast-moving field of industrial and commercial gas utilization. For 14 years he has specialized in non-residential gas sales—both in behalf of manufacturing and utility interests—and is considered an authority on many phases of this subject.

As the new chairman of the Industrial Gas Section of the American Gas Association, Mr. Trembly here undertakes to evaluate and interpret the non-residential portion of the gas business. Says he, "Gas today has found its way into almost every class of industrial enterprise. In some it is the exclusive fuel. There are practically no types of industrial and commercial heating applications where gas is not extensively used in some part of the country." Progressive gas men will find in Mr. Trembly's analysis, an inspiration for further developing their non-residential gas loads.

TO some who study the above chart, the relative sizes of the residential and non-residential loads will be a surprise. To others, the chart will be a confirmation of past beliefs. But to all of us, the accomplishment of the Industrial Giant in pushing our send-out curve upward is highly important. It reveals the ever-growing significance of the non-residential gas load to our industry.

Observe that non-residential gas sales in 1937 were 42 per cent greater than in 1929—83 per cent above the low point of 1932. Note that in 1937 we sold 314 billion *more* cubic feet of non-residential gas than we did in 1929, and that during that same period the total send-out curve (residential plus non-residential sales) went up 311 billion cubic feet—or almost exactly the same amount. In other words, 100 per cent of the increase in total send-out since 1929 is attributable to non-residential gas sales. That's what we mean when we say, "The Industrial Giant Supports the Send-Out Curve."

Let us take a closer look at what happened on the industrial scene from 1929 through 1937. During this period there appeared aggressive competition against non-residential gas in two major forms:

1. The performance of our familiar competitive fuels of the past, namely, coal, fuel oil and electricity, was greatly improved through technological improvements in their utilization. Many operations, which in 1929 used gas to the exclusion of other fuels, have had other fuels adapted to their requirements to some extent. As a result, there is scarcely an application in industrial and commercial heating and processing fields where the gas industry does not have a strong and aggressive competitor challenging its right to that particular load.

2. New fuels have appeared on the industrial horizon—and have grown to substantial proportions. These, particularly, are petroleum de-

rivatives consisting of both light fuel oils for refined heating applications and the liquefiable hydrocarbons, butane and propane. These fuels have interfered, to some extent, with the increased sale of industrial gas as they have found their own place, through economic advantage, in the industrial fuel picture.

In spite of such increased competition, and in spite of strong counter-promotion on the part of the interested groups, non-residential gas has forged ahead to take a commanding position in the industrial fuel field.

Load-Building Factors

This achievement—these practical and successful results in non-residential gas load building—can be attributed to several causes:

1. The development, since 1929, of new and improved uses for gas that have kept our industry abreast and, in many cases, ahead of its competitors as far as fuel application is concerned. Credit for this is due both to equipment manufacturers and to utility industrial gas men.

Outstanding among these new developments is the internally-fired gas radiant tube, which has been adapted to many applications, particularly in vitreous enameling and metal treating. Already over *22 miles* of high temperature gas radiant tubes are in use today in industrial plants throughout the country.

Another major step has been the remarkable development of atmosphere-type heat treating furnaces, which have revolutionized the heat treatment of metals over the past few years. Gas has taken a leading position in fueling applications of these furnaces.

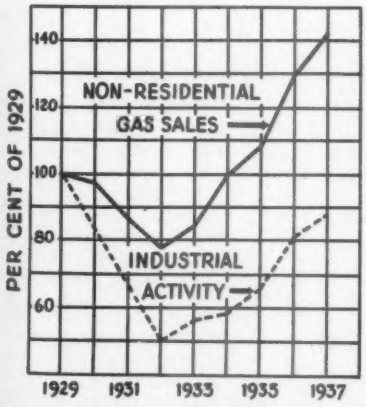


Chart 2—Gain in non-residential gas sales vs. Standard Statistics chart on industrial activity. Index: 1929 equals 100%

In the commercial field, gas has offered individual deck firing of bake ovens, and has made possible specialized apparatus for favored types of cooking jobs (notably deep fat frying and radiant broiling). And don't forget industrial and commercial dehumidification air conditioning with gas.

2. Industrial and commercial gas sales engineers have developed the engineering approach and selling technique necessary to utilize all of the tools at their command against competitive fuels. Both individually and as a group, it can be said that they have put up a superb defense of the existing non-residential gas load against strong competition. They have strengthened their position with customers by insisting on installations of new and modernized gas equipment, by keeping these customers informed of the latest developments in their particular industries, and by rendering to these customers the high quality of service that they have the right to expect from gas utilities. These engineering sales representatives have had a great deal to do, through cooperation with equipment manufacturers, with the development of new gas applications—applications which have brought nearly every heating job in the industrial and commercial field within the reach of some portion of the gas industry, and in some fields established gas as the exclusive fuel.

A. G. A. Focal Point

3. The Industrial Gas Section has served as the rallying ground, the focal point, of non-residential gas activity throughout the entire 15 years of its existence. Through its committee activities, reports, papers, meetings, conferences and other activities, the Section has made it possible for industrial and commercial men and their companies to profit individually from the collective experience of the group.

By specialized expert attention to timely subjects, by the proper engineering analysis of competitive situations and new fuel applications, and by an optimistic and aggressive sales spirit, the Industrial Gas Section has rendered a great service to the gas industry. However, it has been difficult for many who are not closely associated with industrial sales work to appreciate the value to the industry of the Industrial Gas Section's activities and accomplishments. This is because of the engineering and technical nature of most industrial gas applications, because of their variety and complexity, and because industrial gas markets must generally be captured with specialized or individual selling rather than with mass selling.

It is hoped that this and other articles to follow will more clearly present the case of non-residential gas, so that a better understanding may be had of its scope, its problems, and its ultimate place in the economics of the industry.

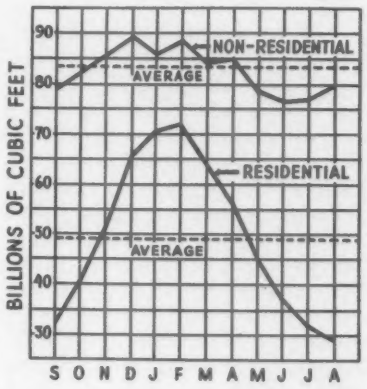


Chart 3—Average monthly send-out (1935-1937 incl.) showing seasonal variation of non-residential and residential gas sales

As a further demonstration of the strides that have been made in selling non-residential gas against competition since 1929, we have prepared Chart No. 2. On the basis of "1929 equals 100," the Standard Statistics Curve of Industrial Activity has been chartered along with non-residential gas sales. At the end of 1937, general industrial activity had reached 87 per cent of its 1929 level—but non-residential gas sales had grown to 141 per cent of the 1929 figure. Obviously non-residential gas has forged ahead, competition notwithstanding, to gain for itself such a substantial position in industry and commerce.

Considering the experience of the past decade as revealed in our charts, and properly evaluating the many factors involved in load analysis, it may be said that, for the country as a whole, *non-residential gas sales are the base load of our industry.*

This contention may be substantiated in many ways:

1. As to Size

In 1937, some 64% of our total industry sales were non-residential.

2. As to Dependability

Look to the record of the past eight years. The increase in total gas sales is entirely traceable to the increase in non-residential gas send-out.

3. As to Security

It can be substantiated that the non-residential load can be held against competition more effectively than any other load of the gas industry. This is demonstrated by the very substantial increase in non-residential gas sales (in spite of the keenly competitive fuel situation) when compared to general industrial activity over the past eight year period.

4. As to Regularity

An average, over the last three years, of non-residential and residential gas sales for the entire country, month by month, is shown in Chart No. 3. Note that the residential sales in February are more than twice those of August, whereas the non-residential sales vary only 15 per cent from the minimum to the maximum month. Seasonally, non-residential sales are much more constant. Since a base load must, of necessity, be one which maintains plant equipment at a constant level of operation throughout the year, the more uniform send-out of non-residential gas is further justification for classifying it as the base load of the gas industry.

With full recognition of all the facts discussed above, a better realization can be had of the value to the entire gas industry of the non-residential portion of its send-out. A further consideration of the facts will show that greater attention and recognition given to the non-residential phase of our business will pay large dividends in the form of still further increased gas sales and revenues.

British Trade Agreement Items Interest Gas Industry

THE trade agreement between the United States and the United Kingdom of Great Britain and Northern Ireland which was signed on November 17, 1938, (Supplement A Publication 1252—Vol. XIX: No. 477) covers not only the trade between these two countries but also the trade of the United States with Newfoundland and with the non-self-governing British colonies. It does not apply to Australia, Canada, New Zealand, the Union of South Africa, Ireland, India, Burma, or Southern Rhodesia. The agreement will go into effect on January 1, 1939, for an initial period of 3 years, and may continue in force indefinitely thereafter, subject to termination by either Government on 6 months' notice.

Twenty agreements (including a second with Canada signed on the same date—Supplement B, Publication 1253—Vol. XIX: No. 477) have now been made under the authority of the Trade Agreements Act of 1934. These documents comprise a total of 287 pages containing a vast amount of material and many tables. Accordingly some of what might prove to be interesting references to the gas industry have been abstracted.

Office Machinery and Appliances

Reductions averaging about one-fourth have been obtained in the rates of duty on standard typewriters, accounting and calculating machines, cash registers, dictating machines, and certain other office appliances. Duties on most of these articles were first imposed in 1932. The concessions cover approximately three-fourths of the total trade with the United Kingdom in commodities of the office machinery and appliance group, the value of which in 1937 was over $7,000,000.

Coal, Coke and Related Products

Imports of coal and coke from the United States into Canada amounted to nearly $33,000,000 in 1937 (including certain coke which enters free). Anthracite was formerly free of duty from all countries. In 1931 American anthracite was dutiable at 40 cents per short ton, and in 1932 the duty was increased to 50 cents.

In 1932 British anthracite was bound free and Canada guaranteed to the United Kingdom that the 50-cent per ton duty on imports from other countries would not be reduced; this obligation was continued when the Ottawa agreement was revised in 1937. Imports from the United States fell from $23,600,000 in 1929 to $9,800,000 in 1935, while imports from the United Kingdom increased from $4,500,000 to $6,500,000. The British coal is naturally used chiefly in eastern Canada.

In addition to the duty of 50 cents per ton, the American anthracite has also been subject to the 3 per cent excise tax, which adds about 20 cents more per ton. The agreement binds the 50-cent rate against increase, and has the effect of removing the 3 per cent tax.

Imports of American bituminous coal into Canada are even larger in value than those of anthracite, $19,800,000 in 1937. This country supplies more than 90 per cent of Canada's total imports, notwithstanding the fact that the duty on American coal is 75 cents per ton plus tax and on British coal 35 cents. Much of the imported bituminous coal is subject to drawback, when used for special purposes, either of 50 per cent of the duty or of 99 per cent of it. Canada has a large production of bituminous coal, principally in Nova Scotia and Alberta, and this production is stimulated both by the duty on imported coal and by certain subsidies. In the new agreement the duty is bound against increase, which results in the removal of the 3-per cent tax; this tax had added about 8 cents per ton to the duty.

Imports of dutiable coke from the United States into Canada were valued at $1,700,000 in 1937. The duty is $1 per short ton. This rate has been bound against increase in the new agreement, resulting in the removal of the 3 per cent tax, which had added considerably to the charges. Large quantities of American coke are admitted into Canada free of duty for certain special uses (value of these imports in 1937, $1,173,000).

Natural Gas Convention

CHAIRMAN Thomas R. Weymouth has appointed all standing committees to serve for the coming year, as well as committees for the Natural Gas Section Convention to be held in Tulsa, Oklahoma, May 8-11, 1939. Lists of committee appointments will be published later as well as details of the convention program. The Program Committee is headed by Elmer F. Schmidt, vice-chairman of the Section.

Gas Slogan Offered

MUCH discussion in the gas industry has centered around the devising of a slogan which could be used for advertising purposes. It occurred to Charles J. Novak, supervisor of the merchandise sales department of the Citizens Gas and Coke Utilities, Indianapolis, that a simple statement such as is shown below might be of practical use and interest to the industry.

AMONG FUELS
Gas
Alone
Satisfies

Accordingly, Mr. Novak submitted the slogan to the American Gas Association so that it could be offered to the entire industry. In the following letter to the Association, Mr. Novak releases the slogan for the unrestricted use of the industry:

"I have devised, and desire freely to make available to the entire gas industry, the above slogan.

"It is my intent, and I now and here declare it, that no one is to copyright this slogan or restrict its use in any way for personal benefit or remuneration.

"Please publish this slogan, with my statement of intent, in the AMERICAN GAS ASSOCIATION MONTHLY. I trust it will be of value to the industry as a whole."

When State and Federal governmental bodies require 28,000 reports annually from one company, old standards of accounting must give way to new.

Accounting Organization . . . *the Answer to Complex New Utility Problems*

By L. L. Dyer
Comptroller, Lone Star Gas Company

L. L. Dyer

THE problems of organizing a modern accounting department to meet the complicated requirements of American industry are too numerous to permit detailed discussion in the scope of this paper. I shall, therefore, not attempt to do more than suggest the problems which, in my opinion, are of major importance.

Work Volume Mounts

Unsound organization may lead to excessive accounting costs, as well as lack of control, due to the fact that conditions of the past decade have brought about a great many changes in the requirements of the Accounting Department. More information, more reports, and more statistics are required, not only by the management, but also by the various regulatory bodies, than ever before in the history of the American accounting profession.

The volume of work has increased with the utilities to such an extent that it has become necessary to enlarge greatly the Accounting Department personnel and establish specialized departments for the purpose of having expert accountants in charge of certain reports and statistical information furnished the various regulatory bodies. The demands for special statistical and accounting reports have increased recently until at the present time, in the case of my company, we are rendering to the various State and Federal governmental bodies some 28,000 reports each year. I am sure that in larger companies this number of reports is greatly exceeded.

A few years ago the requirements of the Accounting Department were very few and the organization of the department rather simple. The management of the company usually prescribed policies which, in its opinion, would best serve the company from a business standpoint requiring only such reports as, in its judgment, gave adequate information on the financial condition of the company and supplied a set of standards for testing performance. It was the aim of the management to have such reports prepared as simply as possible, so that they might be easily understood and at the same time be prepared at a minimum expense to the company.

New Standards Set Up

Over a period of many years the accounting profession had developed a standard of accounting principles which from their general acceptance and usage had become fundamental in the minds of the accountants.

These older standards of accounting have been materially changed and the accountant of today recognizes as accepted practices a large number of new ideas which have come into being on demand of certain regulatory bodies and in many instances, having been approved by the courts, are now a matter of law and a legal requirement.

The serious problems of organization of the Accounting Department began about the time Income Tax laws were passed and increased taxes were required to finance the World War. These laws and the regulations issued by the Department of Internal Revenue, in an attempt to ascertain the correct net income of a particular company, established many rules and accounting principles, and introduced certain ideas that were new to the accountant. These ideas have now been in use long enough to have become accepted as proper and correct accounting.

Changed Operating Conditions

Then came the boom days of the late twenties, when business of all kinds was expanding and consolidating into large organizations. This brought the accounting executive many problems of organization due to the changes in operating conditions and the scarcity of accountants experienced in the new methods of doing business. The incorporation of the holding company in connection with the operation of a large number of firms resulted in problems never before experienced by the accountants, especially those in the public utility business.

In the early part of the depression period there was, of course, a great demand by the public for reduction of public utility rates as well as a demand for reduction of all commodities, due to the reduced earning power of the public. Naturally the professional politician took advantage of this situation to obtain votes and many of them in order to cater to public demand, made reduction of public utility rates a political issue.

For the purpose of protecting the interest of their stockholders and to continue rendering an adequate service to the public, most of the larger companies were forced to establish rate engineering departments to prepare appraisals of the property and compile statements and account-

Presented at joint National Accounting Conference, Edison Electric Institute and American Gas Association, Chicago, Illinois, December 13, 1938.

ing data to be used by the regulatory bodies and in the courts to establish fair and equitable rates for a regulated utility. This resulted in a considerable increase in the accounting forces and brought about another problem for the accounting executive. He was confronted by the job of coordinating these additional tasks with the regular work of the Accounting Department to avoid possible conflicts of policy or the issuing to State bodies of statements for other purposes that did not agree with those rendered by the regular Accounting Department.

Federal Regulation

Following this trend of public demand for more strict regulation of public utility companies, the Federal Government has assumed a large amount of responsibility in regulating the public utilities, in an attempt to regulate the holding companies and the larger concerns doing an interstate business. To accomplish this properly, numerous laws have been passed and various commissions established for the purpose of administering the regulatory powers delegated to them. The commissions in which the public utilities are principally concerned are the Bureau of Internal Revenue, the Securities and Exchange Commission and the Federal Power Commission, the last two commissions being of major importance to the utilities at the present time.

The establishment of these commissions has brought further problems of accounting organization to the accounting executive.

For the proper functioning of these Federal commissions it is necessary for them to secure a large amount of data and complete information concerning the operating policies, history, rate analysis, financial structure, and operating statistics of the various companies coming under their jurisdiction. This requires that the commissions be organized into various departments, such as engineering, legal, statistical, and accounting. Each of these departments, of course, is requesting statements and reports from the companies on a very large scale and from several angles of the business.

It has been the policy of these commissions to attempt to standardize the accounts and reports of the various utility companies so that correct compilation may be made of various reports from the same company or of the same information from several companies.

Under the present organization of most companies, these reports and statements are prepared by several departments, such as production, financial, engineering, operating, accounting, etc., and are supervised by the executive in charge of these various departments. In many instances, due to a long prevailing custom in the company of designating an executive to prepare certain statements and reports, this has resulted in having this work performed by personnel unfamiliar with the services involved.

Coordination Needed

In many cases the reports emanating from these various departments are not coordinated one with another, and especially not coordinated with the accounting records as contained in the general accounting department of the company. Although the information contained therein may be correct from the standpoint of the department making the report, certain general expenses may be omitted or the report may be compiled in such form that it is impossible to check the figures with the reports covering duplicated information issued by other departments.

The commissions, in an attempt to coordinate the work in their offices, are continually checking and compiling the various reports filed with them in the preparation of statistical data and in their line of duty in the regulation of the utility or company. Where the reports and statements of a company are not coordinated or do not follow the established rules and regulations of the commissions in their preparation, it is necessary for the commission to request revised or amended reports or detailed explanations of the differences reflected by the reports on file. The rendering of this additional information and explanation is not only expensive to the company, but in some instances is rather embarrassing.

Those of you who have had experience with the Federal commissions and are familiar with their routine, realize the importance of having all statements and reports rendered by your company, regardless of the department by which they are rendered, coordinated and the information set out in such form that

(Continued on page 37)

Natural Gas Section Offers $150 in Prizes for Essay Contest

TWO essay contests sponsored by the American Gas Association and directed to the attention of the natural gas industry have been announced by Thomas R. Weymouth, chairman of the Natural Gas Section of the Association. A total of $150 in prizes is being offered for the best essays submitted in each contest before March 15, 1939.

The subject selected for the first contest is "The Duties of a Local Manager." This subject will cover all phases of the resident management of a natural gas utility serving a specific city or town. The second contest is similar in scope but covers specifically "The Duties of a District Manager." This subject includes all phases of the resident management of a natural gas utility serving several towns or cities.

Prizes in each contest will be: First—$25.00; Second—$15.00; Third—$10.00; Five honorable mention prizes—$5.00 each. Each contest will be run separately.

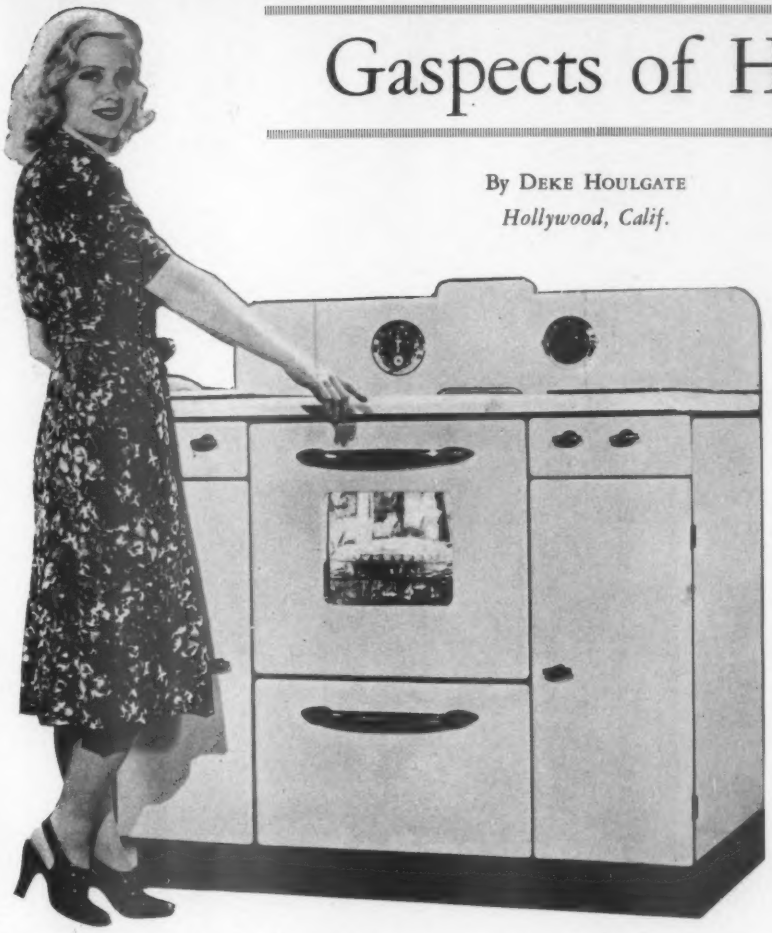
The following rules govern both contests:

1. Contest is open to all employees of member companies of the American Gas Association.
2. Papers must be limited to maximum of ten pages, double space.
3. Papers must be typewritten on sheets 8½ x 11 inches.
4. Original and three copies of each paper must be submitted.
5. Papers must be forwarded on or before March 15, 1939 to E. H. Poe, secretary, Natural Gas Section, American Gas Association, 420 Lexington Avenue, New York, N. Y.
6. The decisions of the judges are to be final.
7. All papers submitted in the contest are to become the property of the Natural Gas Section of the American Gas Association.

As a special feature of the contests it is contemplated that the authors of the prize winning papers will present them at the annual meeting of the Natural Gas Section at Tulsa, Okla., in May 1939. Present plans call for a session of the meeting to be devoted to the problems of local and district managers of natural gas companies.

Gaspects of Hollywood

By Deke Houlgate
Hollywood, Calif.



Mary Carlisle, featured player of Paramount pictures, poses with one of those gorgeous new models of gas ranges introduced to the market on August 1.

HOLLYWOOD is a mythical city located somewhere in Southern California. It is bounded on the north by personal prestige; on the east by public esteem; on the south by fantastic figures; and on the west by love of the best.

Rather than be accused of ambiguity, let us explain. A citizen of Hollywood must always and ever guard, nurture and increase his or her prestige. Nothing less than this year's model is the car to drive. Clark Gable always sits on the fifty yard line at football games, and James Cagney ringsides at fights. Loretta Young dines at the "right" places, regardless of better food elsewhere.

A Hollywoodite is forever in the public eye. What Claudette Colbert or Myrna Loy wears is copied the world over. Hollywood's games take on new popularity. A fad born in Hollywood is quickly taken over by millions, yet word of it is hardly out before restless Hollywood is titillating its frayed enthusiasms with some other novelty.

Hollywood loves fantastic figures. An elaborate caste system grips its citizens, placing them in groups according to the weekly pay check as accurately as do markings in India. A girl who worked four years behind a ribbon counter in Kansas to earn bus fare west, suddenly finds herself in a salary bracket higher than that of the U. S. president. She also promptly acquires a new set of friends. Fantastic?

But the boundary which most rigidly sets Hollywood apart from the rest of the world is its insistence upon the best. Nothing is ever good enough. It must be the best.

Possibly this stems from the constant use of superlatives in describing each product that Hollywood offers for sale. Certainly, no picture is *ever* "as good as" a previous one. Occasionally it is billed as "better"; more often as "the best."

That is why gas and gas appliances are used in Hollywood homes almost to the point of crowding competitors from the field. In no other spot on the globe is this issue so clearly drawn, for here in Southern California is an abundance of cheap oil, a surplus of low cost electricity.

All the way down the line, from glamorous stars and famous producers, even below such important cogs as "grips"* and members of the hustling "swing gang,"† Hollywood cooks, heats and freezes with the aid of natural gas. Its studios are among the biggest customers served by local utilities.

Come with us on a tour of Hollywood and receive a vertical cross-section peek inside the homes of a few people who keep us walking through theatre doors at least once each week. (See next two pages.)

* Cameraman's helpers.
† Set dresser's helpers.

Gas Appliance Debuts

"Gangster Boy," starring Jackie Cooper, makes use of a Universal range.

•

A new Jones Family picture, "Bundles of Joy," uses a Gaffers & Sattler range.

•

Two Magic Chef ranges, one a heavy duty model, were used in kitchen sets during the filming of a Hardy Family picture.

•

"Catherine The Last," an MGM film, brought a request for a Gaffers & Sattler range.

•

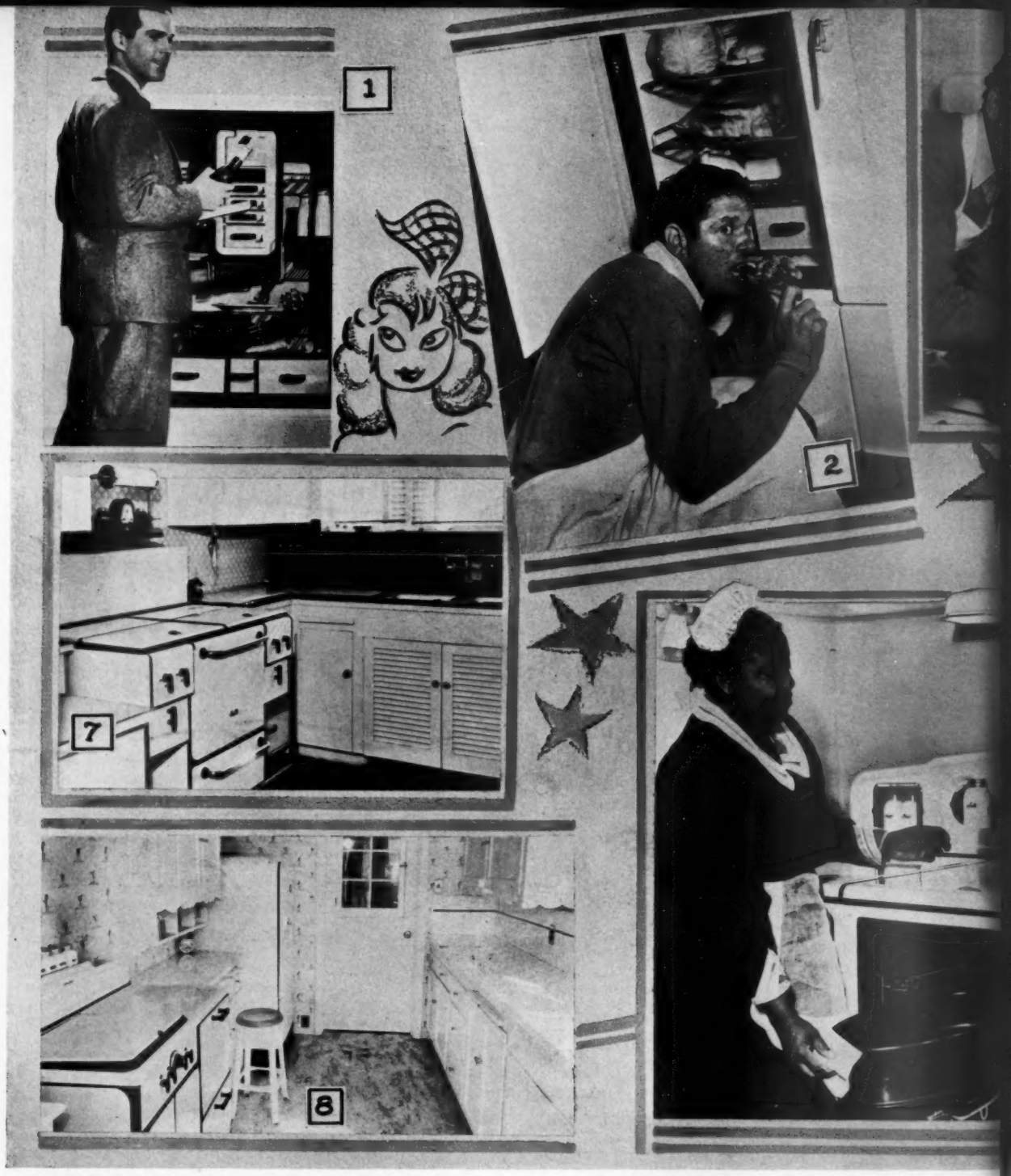
A Universal range and a J-600 Electrolux were used in a kitchen set at 20th Century-Fox in "Thanks For Everything."

•

"Parents On Probation," a Paramount picture, make use of a Gaffers & Sattler range and a small Electrolux.

•

"Exile Express," with Anna Sten, a Grand National film, uses an Electrolux and a large Wedgewood range.

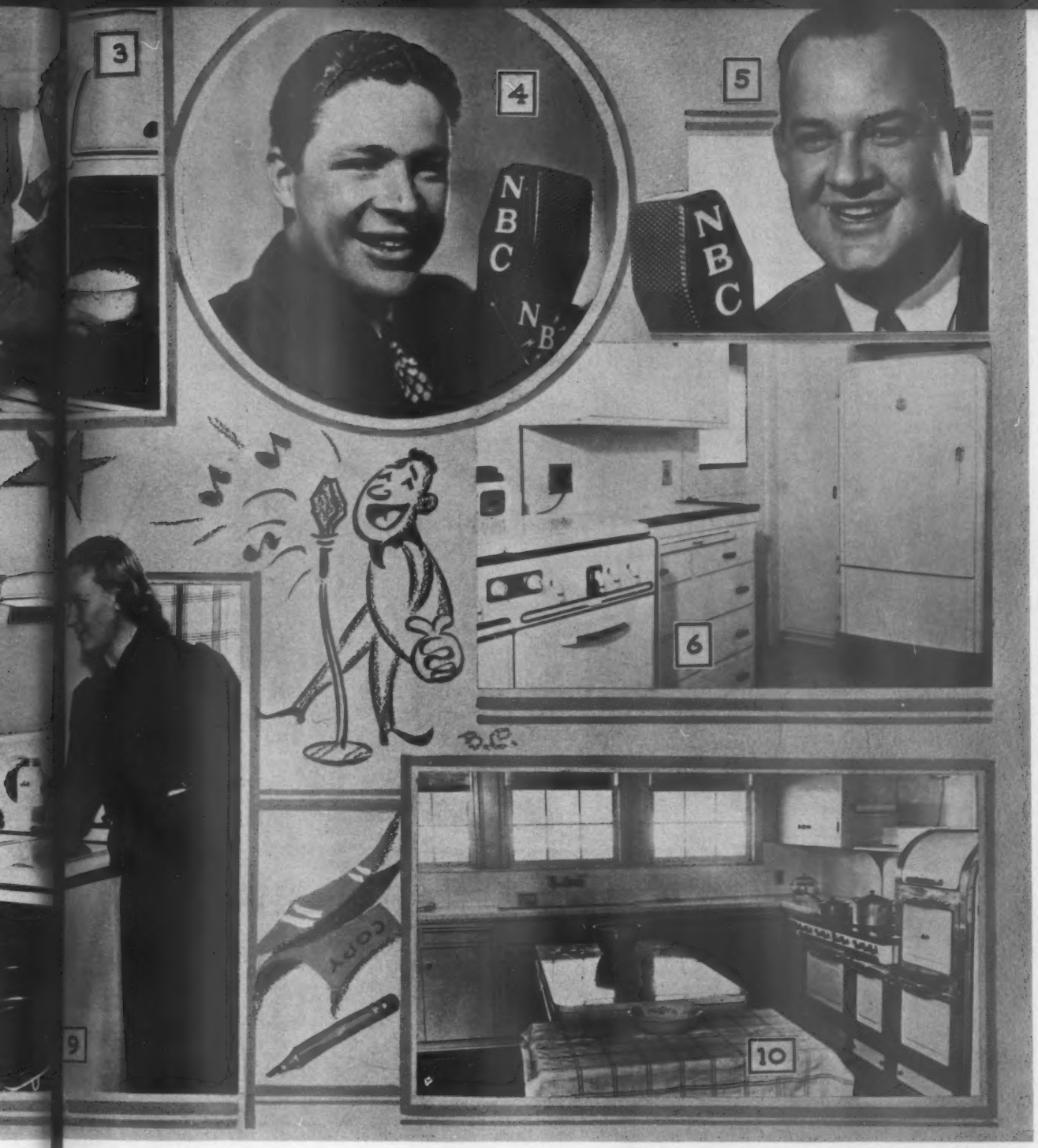


1. Fred MacMurray slips out to the kitchen of his rambling Brentwood home for that late-at-nite snack. This popular Paramount star is one of the most durable of box office names and is at his best in rollicking comedy.

2. & 3. A gas refrigerator and a heavy duty gas range are two reasons why Bob Burns, radio and screen star, likes on occasion, to barge out into the big kitchen of his Brentwood home where an able cooking staff usually officiates, and mess around with some cooking ideas of his own. One picture catches him in the act of rifling the refrigerator. This, he asserverated, was an old Ozark custom picked up from his Uncle Snazzy back in Van Buren.

4. Kenny Baker, another star of the screen and air lanes, is soon to move into a beautiful new home just off Coldwater Canyon, one of the Southland's most fashionable residence districts. Gas for cooking, refrigeration, water and house heating was firmly specified.

5. That jolly laugh heard each Sunday night on the Jack Benny radio show is supplied by popular Don Wilson. Gas supplied to their new home in sunny San Fernando valley heats, cooks and freezes for Mr. and Mrs. Wilson. Stables, kennels and fruit trees are scattered around the grounds of this ideal estate.



6. The Don Wilson kitchen. Yes, there was a dish of jello in the big gas refrigerator.

7. The pleasant kitchen of the Luigi Luraschis is glimpsed. This new home recently built in North Hollywood in the shade of big walnut trees is another all-gas residence. Mr. Luraschi heads the foreign department for Paramount.

8. Known to Hollywood as one of its ace publicity men, and now a production executive for a major studio, Bill Thomas is one of those personalities seldom found outside of Hollywood. The gas kitchen of his new home and the nearby cozy breakfast nook look out over the green fairways of the Lakeside Golf Club where most of the film colony dig their divots.

9. Marge Decker, publicity writer for Columbia, pictured in the act of supervising an evening meal, is one young lady who enjoys both a career and a home. Her husband, Cliff Lewis, is advertising manager for Paramount.

10. No bigger name in Hollywood is to be found than that of Darryl Zanuck, executive head of the huge 20th Century-Fox. One corner of the large kitchen in his "beach cottage" shows the gas range recently installed. Next door to this summer home is a twin "cottage" built by William Goetz, executive producer of the same studio. A twin to the Zanuck range shown is also in use there.

Gas Tie-in Advertising Contest Closes

THE nationwide contest conducted by the Association of Gas Appliance and Equipment Manufacturers awarding prizes to advertising managers of gas utilities and combination companies in the United States and Canada whose local advertising activities best tied-in with the American Gas Association's national advertising campaign closed December 31.

The competition, officially opened on March 1, was created as a means of stimulating greater interest on the part of local companies in the American Gas Association's national advertising campaign. It was aimed at inducing gas companies to tie-in their local promotional efforts more closely to the national advertising endeavor.

The contest committee, under the chairmanship of F. E. Sellman, of New York, A. G. A. E. M. treasurer, has announced that "general distinctiveness of the advertising and most effective use of the material available" will be the basis on which the prizes will be awarded.

Besides the cash prizes amounting to $1,000 being offered to individuals, the companies whose advertising managers receive awards, will be presented with handsome embossed certificates attesting the awards.

British Fair Building Signs Gas Contract

A CONTRACT has been signed under which the Kingdom of Great Britain will use Consolidated Edison Company's gas service for cooking, water heating and space heating in its building at the New York World's Fair. It is estimated that approximately 2,250,000 cubic feet of gas will be used. Another World's Fair contract covers gas use in the Brass Rail, a restaurant—an estimated consumption of 1,700,000 cubic feet.

Prize-Winning House Equipped for Gas

GAS service for the modern household received another boost with the announcement of the prize-winning houses in the annual architects' contest conducted by *House & Garden*. Three of the four big jobs in the prize-winning house in Class II of the competition use gas—namely, cooking, water heating and house heating. Class II was limited to houses of six rooms and under. The house was designed by William Wilson Wurster for R. R. King of Atherton, California.

The contest includes only houses which are published in *House & Garden* for architectural merit during the year. The judges this year were Otto Teegen, of New York, coordinator of the Town of Tomorrow at the New York World's Fair, and Royal Barry Wills, of Boston, Mass. Complete results are published in the January issue of the magazine.

H. N. Ramsey, chairman, Sales Promotion Committee, Gas Water Heater Division, Association of Gas Appliance and Equipment Manufacturers, and J. W. Clark, chairman, Water Heating Committee, American Gas Association (on right) survey with satisfaction the largest batch of tags they've received since the "1938 Prize Parade" was launched January 1, to promote sale of gas water heaters.

Bumper Crop on "Prize Parade"

EVERY tag in the picture above—approximately 125,000—represents a gas water heater sold! They come from gas company salesmen, retail dealers and plumbers from all parts of the country. According to points made, those who have sent them in are eligible for various of the 300-odd prizes in this nationwide sales promotional campaign, sponsored by more than 95 per cent of America's gas water heater manufacturers.

The campaign closed November 30. In addition to gas companies and retail water heater dealers all over the country, approximately 5000 gas company salesmen and 30,000 plumbers participated. Contestants in this promotional project did not compete against one another, each one winning awards directly in proportion to his own sales efforts.

Manufacturers Appoint Program Committee

E. R. GUYER, of Chicago, president of the Association of Gas Appliance and Equipment Manufacturers, has appointed a Program Committee to draw up plans for the Association's annual convention to be held at the Roosevelt Hotel, New York, May 24 to 26. Lucian Kahn, of the Estate Stove Co., Hamilton, Ohio, has been named chairman of the Committee.

Serving on this planning group are: F. E. Sellman, E. C. Adams, T. T. Arden, R. L. Clewell, J. Scott Fowler, Philip S. Harper, Merrill N. Davis, W. P. Hutchinson, W. P. Smith.

"Wife Insurance"

BUY a CP gas range and you have one of the best forms of "Wife Insurance." At least so says the novel advertising mailing piece under this title recently made available to gas companies for distribution to prospective customers.

Printed in the form of an insurance policy, it is guaranteed to catch the eye and hold interest until the last paragraph is read. Comic illustrations dance along with the written word, and there is even poetry for the poetic and puns for (what shall we call them?) the punny. There's a real sales message on the CP gas range, along with the humor, that should have a telling effect.

You can secure "Wife Insurance" through the American Gas Association, 420 Lexington Ave., New York, N. Y., or from the Tell It Right Service, 2 West 45th St., New York, N. Y., with your company's imprint at $22.00 per 1000 copies, F.O.B., New York.

Executive Meeting in San Francisco

THE Executive Board of the American Gas Association has selected San Francisco as the meeting place of the Association's executive conference. The conference dates have not been determined except that they will be around the middle of May. Delegates who attend the conference will have an opportunity to visit the Golden Gate International Exposition.

Patterson Appointed

ROBERTS and Mander Stove Company, Hatboro, Pa., announces the appointment of Donald W. Patterson as manager of their metropolitan New York division. Mr. Patterson has been assistant manager of the company's New York office for the past twelve years.

Natural Gas Section Office Moved

Effective January 1, 1939, the office of the Natural Gas Section will be moved to the American Gas Association headquarters in New York where all the affairs of the section will be handled in the future.

Superceded by Gas

IT seems that the enterprising electric service at Tunbridge Wells, England, when securing a commercial installation, paints a large sign which includes the words "electric kitchen." Whenever the Tunbridge Wells Gas Company wins the job over to gas they paint out those words, leaving the remainder of the sign, and paint instead the words "Modern Gas Kitchen."

Personal AND OTHERWISE

Elected to A. G. A. Executive Board

D. W. Harris

D. W. HARRIS, of Shreveport, La., vice-president and general manager of the Arkansas Natural Gas Corporation, and Leon B. Eichengreen, vice-president of the Philadelphia Electric Company, have been elected to the Executive Board of the American Gas Association, according to announcement by Conrad N. Lauer, of Philadelphia, president of the Association.

L. B. Eichengreen

Mr. Harris has been vice-president and general manager of Arkansas Natural Gas Corporation since 1928. In 1912 he was graduated from Georgia Tech, which, incidentally, was founded by his father, the former Gov. Nat Harris of Georgia. Mr. Harris became affiliated with the Denver Gas and Electric Company of Denver, Colo., and soon was promoted to the New York office of Henry L. Doherty & Co. as director of the budget and assistant treasurer of the Cities Service Company. Before coming to Shreveport in 1927 he was treasurer of the Empire Gas & Fuel Co. and vice-president of the Indian Territory Illuminating Oil Company at Bartlesville, Oklahoma.

For two years Mr. Harris has been a director of the Shreveport Chamber of Commerce. He is a vice-president of the Louisiana-Arkansas division of the Mid-Continent Oil and Gas Association, and a member of the board of directors of the general mid-continent association.

Leon B. Eichengreen was elected a vice-president of the Philadelphia Electric Company early last summer. In 1908 he was graduated from the University of Pennsylvania, as a mechanical engineer. The following year he entered the employ of The United Gas Improvement Company, where he held positions, successively, of illuminating engineer, operating engineer, and general superintendent of gas operations.

He became identified with the Philadelphia Electric Company in August, 1928, as manager of the gas department. Since 1931, until he became vice-president, he occupied the position of assistent to the vice-president in charge of engineering, as head of the gas engineering department.

Mr. Eichengreen is a vice-president of the Pennsylvania Gas Association and a member of the Engineers' Club, Penn Athletic Club and St. David's Golf Club. He is a resident of St. Davids.

Praise Barnum's Work as ASA President

DANA D. BARNUM, past president of both the American Gas Association and the Boston Consolidated Gas Company, received a vote of thanks at the annual meeting of the American Standards Association, November 30, for his three years' of service as president of that organization which terminated at the end of the year. Warm appreciation was expressed for his leadership during which, it was pointed out, the membership had grown, and the volume of work and influence of the Association had greatly increased.

At the same meeting it was announced that George B. Cortelyou, first president of the American Gas Association and past president of the Consolidated Edison Co. of New York, had been elected the first honorary member of the American Standards Association.

Reorganization Changes

WILLIAM J. HAGENAH, president of Public Utility Engineering and Service Corporation, has announced the election of E. D. Uhlendorf as a vice-president and director, and M. A. Morrison as secretary of the corporation. It was also announced that the board of directors of the corporation has been reduced from fourteen to five members. The retiring directors consist of presidents of the public utility operating companies in the Standard Gas and Electric Company system.

The reorganization of the board of directors of Public Utility Engineering and Service Corporation at this time, Mr. Hagenah said, is on account of negotiations that are now in progress for the reacquisition of the service corporation by Standard Gas and Electric Company as a wholly owned subsidiary. By such reacquisition it is believed Standard Gas and Electric Company would be in a better position to more fully comply with the spirit of the Public Utility Act of 1935.

The board of directors of Public Utility Engineering and Service Corporation now consists of Mr. Hagenah, Henry C. Cummins, Bernard F. Braheney, Mr. Morrison and Mr. Uhlendorf.

All of the present directors, with the exception of Mr. Uhlendorf were formerly members of the board. Mr. Uhlendorf has been executive engineer and Mr. Morrison has been treasurer of the corporation, which position he will retain. Mr. Cummins and Mr. Braheney continue as vice presidents.

On Advertising Committee

George F. Mitchell

GEORGE F. MITCHELL of Chicago, president of The Peoples Gas Light & Coke Company, has been appointed a member of the American Gas Association's Committee to Conduct National Advertising. The appointment was announced by T. J. Strickler of Kansas City, chairman of the committee. Mr. Mitchell will represent participating gas companies in Illinois, Indiana, Iowa, Michigan, Wisconsin and Minnesota.

More than 700 gas companies are supporting the advertising campaign which is now in its third year and has been approved by the Association's Executive Board for an extended term of three years.

Pension Article Gets Wide Distribution

THE article by Roland S. Child, Central Hudson Gas & Electric Corp., Poughkeepsie, N. Y., entitled "An Analysis of Employee Pension Plans," which appeared in the February, 1938, issue of the A.G.A. MONTHLY has been abstracted and distributed by the Bureau of Foreign and Domestic Commerce of the Department of Commerce. This article was sponsored by the Committee on Personnel Practices of the American Gas Association.

This bureau publishes a business information service the purpose of which is to furnish business men, students and others a convenient source of authentic material on the various problems confronting them. This service is sent to chambers of commerce, trade associations, libraries, universities and similar organizations where it is maintained under standardized file headings for the use of the public.

Natural Gas Course Instructor Has Unusual Qualifications

By Prof. C. M. Young
University of Kansas

The article below, describing the ability and personality of the instructor of the home study course on natural gas at the University of Kansas, was written by Professor Young at the request of the American Gas Association. Prof. Young is actively in charge of the course which is sponsored in cooperation with the Association. It has been widely acclaimed by the scores of students from all parts of the world who have completed the course of study—Editor.

George H. Cobb

In anything as closely personal as the instruction in the Home Study Course on Natural Gas, the degree of success depends largely on the ability and personality of the instructor. Students of the course in the United States and Canada, and a few odd corners of the world, will be glad to know something about the man whose comments appear on so many papers.

For a little more than three years, George H. Cobb has been reading most of the papers prepared by students of the course. This work requires an unusual combination of abilities. It consists of reading papers, making occasional corrections, estimating the worth of each paper and offering suggestions. Since originality and extended discussion are encouraged in the preparation of papers, no two are alike and the judging of the many types which are submitted requires close study and the exercise of critical judgment.

Earlier students will perhaps remember the comments of R. C. Mitchell. He resigned from this position after one year to return to field work. Now he has gone back to the Dutch East Indies where he had previously spent eight years. A wonderfully likable fellow—we were sorry to see him go.

Before Mr. Mitchell left the work, a search was made for a new man with the essential qualifications to teach this course successfully. He must know the fundamentals of the natural gas industry, and he must be interested in encouraging others to learn all that they can and be willing to help them. The reading of papers and checking of answers to questions is only a part of the function of an instructor. He should be able to consider the views of all sorts of people and help all kinds to extend themselves to the limits of their abilities; he should be able to encourage good work and occasionally give stimulating advice.

A man combining these abilities was found in Mr. Cobb. He had completed the course and knew what it could do for a student; he had had enough experience to know production, transportation and something of the other branches of the industry, and he had the personality.

About eight years ago he started out to learn oil and gas from the bottom as a roustabout. After holding various positions and gathering a large experience in production he became engineer in a compressor plant on the Panhandle-Chicago line.

Then he found that he wanted more university work, so he gave up his position to enter the University of Nebraska. It was this action which led to the invitation to go to the University of Kansas to help with the gas course and spend part of his time on the studies he wanted to follow to get deeper into the gas business. That was in the fall of 1935.

For two summers he spent part of his time on pipe-line work, and last summer he went to the Texas Panhandle, where he had opportunities to work on large wells.

The cheerful way in which students of the course carry through a long study program is due in large part to his interest in them as individuals and to his accurate analysis of the special assistance which each may need.

W. N. Bissell Heads Association's Personnel Committee

W. N. Bissell

William N. Bissell has been appointed chairman of the Committee on Personnel Practices of the American Gas Association by Conrad N. Lauer, president of the Association. For the past eight years, Mr. Bissell has been personnel manager of the eastern division of Niagara Hudson Power Corporation with headquarters at Albany, N. Y.

The Committee on Personnel Practices, now beginning its third year of existence as an Association activity, plans to make important studies of industrial relations problems of the gas industry. Previous work included the compilation of vital data on existing practices and the sponsorship of outstanding speakers at Association meetings.

Other members of the committee have been announced as follows:

L. M. Ayers, Pittsburgh, Pa.; V. L. Board, Public Service Co. of Colorado, Denver, Colo.; A. M. Boyd, Philadelphia Electric Co., Philadelphia, Pa.; R. S. Child, Central Hudson Gas & Electric Corp., Poughkeepsie, N. Y.; John L. Conover, Public Service Electric & Gas Co., Newark, N. J.; J. D. Dingwell, Jr., Washington Gas Light Co., Washington, D. C.; H. L. Donaldson, Philadelphia Co., Pittsburgh, Pa.; F. W. Fisher, Rochester Gas & Electric Corp., Rochester, N. Y.; Oliver S. Hagerman, Atlantic Seaboard Corp., New York, N. Y.; E. L. Hall, Portland Gas & Coke Co., Portland, Oregon; Paul W. Herring, The Peoples Gas Light & Coke Co., Chicago, Ill.; George Jaquet, The Connecticut Light & Power Co., Hartford, Conn.; R. D. Roley, Boston Consolidated Gas Co., Boston, Mass.; Charles G. Simpson, The Philadelphia Gas Works Co., Philadelphia, Pa.; O. E. Wasser, The Utility Management Corp., New York, N. Y.; Dr. J. J. Wittmer, Consolidated Edison Co. of N. Y., Inc., New York and Kurwin R. Boyes, Secretary, American Gas Association, New York, N. Y.

Mr. Bissell was born on October 3, 1888 at Salem, Massachusetts, and spent his boyhood in Boston. After attending St. Andrew's School and Princeton University, he spent three years in the operating, traffic and construction departments of steam railroads in new England, Pennsylvania, Illinois and British Columbia.

He entered the public utilities field in 1912 with Stone & Webster in Boston. Until the War he worked as an accountant on Stone & Webster properties in Connecticut, Massachusetts, Nova Scotia, Florida and Michigan. After two years' service in France with the 3rd Regiment, Chicago Engineers he was transferred to London, England, where he was an auditor for the United States Shipping Board

In 1921 he began work with the Adirondack Power & Light Corporation as traveling auditor, and was later made assistant treasurer of that company and of New York Power & Light Corporation. Shortly after the formation of Niagara Hudson Power Corporation, Mr. Bissell was appointed to his present position.

"There is no such person as the complete gas engineer."—G. Dixon (Great Britain.)

AFFILIATED ASSOCIATION *Activities*

Pacific Coast Gas Association

THE action of the A. G. A. Executive Board in voting to hold its 1939 Spring Conference in San Francisco has greatly pleased the officers of the Pacific Coast Gas Association who have pledged themselves to assist in every way possible to make the conference constructive and pleasurable to those who attend. Actual dates have not yet been decided upon but the conference probably will take place in May. At that time the Golden Gate International Exposition, which opens February 18, will be in full swing and no doubt visitors will be given full opportunity to see what promises to be one of the most beautiful and exotic expositions ever staged.

THE Cooperative Gas Exhibit sponsored by the Pacific Coast Gas Association at the Golden Gate International Exposition is rapidly taking its final form. All rough construction of walls and stage is in place and the completion of interior details and decoration is under way. R. E. Fisher, chairman of the committee, has announced that the Norge Corporation will take part in the exhibit through its Pacific Coast distributor, Leo J. Myberg Company. The new Norge CP range will be exhibited. This brings the number of cooperating range manufacturers to seven, the others being American Stove Company, Cribben & Sexton, Gaffers and Sattler, Hammer-Bray Co., Jas. Graham Mfg. Co., and Geo. D. Roper Corporation. No more can be accommodated.

HAROLD LAUB, chairman of the Technical Section of the Pacific Coast Gas Association, has selected March 23 and 24 as the dates for the annual Pacific Coast Spring Technical Conference. All technical committees and subcommittees are pointing toward this date. It is anticipated that some 20 papers and reports will be presented for discussion.

IT is the general belief of Pacific Coast gas companies and range distributors that the CP range program has distinctly accelerated gas range sales. A. F. Rice, regional director for the Pacific Coast, reports that active promotion of CP is going forward in practically all territories. The regular 10-day fall range campaign of the Gas Appliance Society in Northern California was more successful than anticipated and this is ascribed to the interest created by the CP range promotion. In the one district for which results have been reported the average unit retail price of all ranges sold by dealers during October was $132.

CONVERSION of portions of the Pacific Gas and Electric Company's Colgate and De Sabla Divisions to natural gas is now practically complete. The conversion affects all territory formerly served from the carburetted water gas plant at Marysville, California, including the cities of Marysville, Yuba City, Chico, and Oroville. Natural gas comes from the new Marysville Buttes gas field, and has an average heating value of 1015 B.t.u. and specific gravity of .58.

Inasmuch as the existing pipe line is about 60 miles long and the source of supply of both manufactured and natural gas is at its south end, the conversion presented an interesting problem. It was solved by introducing a mixture of natural gas and air into the lines so proportioned that satisfactory service would be maintained until the change-over adjustment crews could come along and make the adjustments necessary. The mixture was introduced at points just ahead of the adjusting crews, the actual adjustments being made with straight natural gas delivered to the appliances. The plan worked perfectly.

Oklahoma Utilities Association

GLENN C. KILEY, western division manager, Oklahoma Gas and Electric Co., Oklahoma City, was elected president of the Oklahoma Utilities Association at a meeting of the executive board held in Tulsa in December.

Other officers elected at the meeting were: first vice-president, Frank B. Long, vice-president, Oklahoma Natural Gas Company; second vice-president, R. W. McClure, president, Oklahoma Power and Water Co.; treasurer, W. R. Emerson, vice-president and treasurer, Oklahoma Gas and Electric Co.; secretary, Kate A. Niblack, Oklahoma Utilities Association.

The annual meeting of the Association will be held in Tulsa, on March 20 and 21.

Pennsylvania Gas Association

THE thirty-first annual convention of the Pennsylvania Gas Association will be held at the Sky Top Club, Sky Top, Pa., on May 2, 3 and 4. Plans are being formulated for an interesting and informative program and it is expected that a number of prominent speakers of national reputation will present papers.

The officers of the Association are: president, E. E. Mensch, Williamsport; vice-presidents, L. B. Eichengreen and P. T. Dashiell, Philadelphia, and M. A. Boylan, Scranton; secretary, F. W. Lesley, York; treasurer, W. G. Sterrett, Jenkintown; managing director, A. B. Millar, Harrisburg. E. W. Ehmann, Ardmore, is chairman of the Papers Committee.

A mid-year sales session will be held in Philadelphia in February.

Wisconsin Utilities Association

MORE than sixty committee members attended the conferences of committees of the Technical and Commercial Divisions of the Gas Section at the Pfister Hotel, Milwaukee, November 28.

Each one of the six committees of the Commercial, five of the Technical and two general divisions outlined individual research programs which will be undertaken.

Delegates voted to hold the annual convention at the Pfister hotel, March 13 and 14. The first day will be devoted to joint sessions. Each division will conduct its own conferences on the second day. Tentative subjects for all sessions were selected at the meeting.

A proposal was made that a prize sales contest be conducted for gas cookery salesmen. The salesmen writing the best three papers on selling modern gas cooking will be featured on the program. Details of the contest will be announced later.

Southern Gas Association

IN March of this year, the annual meeting of the Southern Gas Association and the A. G. A. Southern-Southwestern Regional Gas Sales Conference will almost literally "sail along on a breeze" as they are being conducted aboard the S.S. "Rotterdam," luxurious cruise liner of the Holland-America Line.

Instead of the usual three-day hotel convention, this year's meeting will be held in the form of a five-day cruise. The itinerary of the cruise is as follows:

Sun. Mar. 19 Sail from New Orleans 12:00 Noon
Mon. Mar 20 At sea
Tues. Mar. 21 Arrive Havana 8:00 A.M.
Wed. Mar. 22 Sail from Havana 3:00 P.M.
Thur. Mar. 23 At sea
Fri. Mar. 24 Arrive New Orleans 12:00 Noon

In addition to this novel arrangement, there will also be inaugurated the policy

of having outstanding leaders of other industries address the members of the Southern Gas Association. Elmer Wheeler, president of Tested Selling Institute, will be the key-note speaker. In addition to the unusually attractive conferences, open forums on various subjects will be instituted which will be held at odd hours during the day and evenings in specified rooms.

The meetings of the Southern-Southwestern Regional Gas Sales Conference on residential sales promotion will be held on Monday afternoon, March 20 and Thursday afternoon, March 23.

The S.S. "Rotterdam" is considered to be one of the finest of the huge trans-atlantic liners. It is a ship of 34,700 tons displacement, containing among scores of conveniences and features the famous outdoor "Scheveningen Beach and Casino."

Joins General Gas Light Company

Robert E. Polk

ROBERT E. POLK has been appointed eastern sales manager of General Gas Light Company with headquarters at 23 Warren Street, New York City, effective January 1. For a number of years Mr. Polk, as general manager of Equitable Sales Company and utilization sales manager Equitable Gas and Duquesne Light Co.'s, of Pittsburgh, Pa., has been in charge of all appliance merchandising and gas heating sales for those companies.

North Carolina State Short Course

SEVENTY-EIGHT gas plant operators and employees from all sections of North Carolina and from a number of other states gathered at North Carolina State College November 17-18 for a short course sponsored by the College Extension Division headed by Director Edward W. Ruggles.

Members of the college's engineering faculty were assisted on the instructional staff by technical experts from the industry and by State officials with messages of interest to the gas operators. Attendance more than doubled the 35 registered for a similar institute last year, and the operators appointed a committee to cooperate with the college and extension division in planning future programs.

On Saturday morning, November 19, the operators met with E. V. Bowyer of Roanoke, Va., regional manager for the American Gas Association, to discuss suggestions for promotion of the certified gas range. The meeting was arranged by L. E. Hurst, division manager of the Raleigh Gas Co.

W. Jennings Young Dies

W. JENNINGS YOUNG, president of the Northern Oklahoma Gas Company, Ponca City, Oklahoma, died November 26.

Jennings Young, as he was known to his many friends in the industry, had a long and colorful career. After entering Pennsylvania State College in 1915, his course of study was interrupted by 18 months service in the World War. He finished his college career in 1920 and in October of that year joined Oklahoma Natural Gas Company, of Tulsa. During his 18 years of service with that company, he worked in nearly every department. He was vice-president in charge of operations at the time of his resignation in May of last year when he accepted the presidency of the Northern Oklahoma Gas Company.

Mr. Young was an active member of the American Gas Association, having served on many committees under the Natural Gas Department. He was second vice-president of the Southern Gas Association and vice-president of the Oklahoma Utilities Association. Mr. Young's brother G. S. Young is vice-president and general manager of the Michigan Gas Transmission Company, of Detroit. His father, W. H. Young, in the early days, was interested in the oil and gas business in Western Pennsylvania.

CONVENTION CALENDAR

JANUARY

Jan. 13 **New England Gas Association**—Sales Division
Boston, Mass.

20 **New England Gas Association**—Operating Division
Boston, Mass.

FEBRUARY

Feb. 9-11 **Mid-West Regional Gas Sales Conference**
Stevens Hotel, Chicago, Ill.

16-17 **New England Gas Association**—Annual Convention
Boston, Mass.

MARCH

Mar. 2-3 **Eastern Natural Gas Regional Gas Sales Conference**
Roosevelt Hotel, Pittsburgh, Pa.

13-14 **Wisconsin Utilities Association**—Gas Division
Pfister Hotel, Milwaukee, Wis.

19-24 **Southern Gas Association**—A. G. A. South-Southwestern Regional Gas Sales Conference
SS Rotterdam

20-21 **Oklahoma Utilities Association**
Tulsa, Okla.

APRIL

Apr. 10-12 **Mid-West Gas Association**
Des Moines, Iowa

12-14 **Missouri Association of Public Utilities**
Muehlebach Hotel, Kansas City, Mo.

17-19 **American Gas Association Distribution Conference**—Technical Section
Palmer House, Chicago, Ill.

MAY

May 1-4 **U. S. Chamber of Commerce**
Washington, D. C.

2-4 **Pennsylvania Gas Association**
Lodge of Sky Top Club, Sky Top, Pa.

8-11 **A. G. A. Natural Gas Section**
Tulsa, Okla.

15-17 **A. G. A. Joint Production and Chemical Committee Conference**—Technical Section
Rochester, N. Y.

24-26 **Association of Gas Appliance and Equipment Manufacturers**
Roosevelt Hotel, New York, N. Y.

JUNE

June 5-9 **Edison Electric Institute**
Waldorf Astoria Hotel, New York, N. Y.

6-7 **Canadian Gas Association**
Hotel Connaught, Hamilton, Ontario

9 **Empire State Gas & Electric Association**—Gas Operating Group
Park Central Hotel, New York, N. Y.

AUGUST

Aug. 23-25 **National Association of Railroad and Utilities Commissioners**
Seattle, Wash.

SEPTEMBER

Wk. 4 **Pacific Coast Gas Association**
Fairmont Hotel, San Francisco, Calif.

9 **Gas Industry Day**—Golden Gate Exposition

OCTOBER

Oct. 9 **Gas Industry Day**—New York World's Fair

9-12 **American Gas Association Annual Convention**
New York, N. Y.

Wk. 23 **National Metal Congress and Exposition***
Chicago, Ill.

* Includes exhibit sponsored by A. G. A. Industrial Gas Section.

· · · BOOK REVIEWS · · ·

Carbon Monoxide Asphyxia by Cecil K. Drinker, M.D., D.Sc., Professor of Physiology and Dean, School of Public Health, Harvard University (Oxford University Press) is dedicated to Oscar H. Fogg "who, first as secretary-manager of the American Gas Association and later as an executive of the Consolidated Edison Company of New York, has worked steadily, effectively, and unselfishly for safety in the use of gas."

The chief purpose of this comprehensive text monograph is to supply information to men and women who have to deal with the problems of carbon monoxide asphyxia. No man is better equipped than Dr. Drinker to deal with "this dangerous by-product of some of our great modern conveniences," for he is not only well qualified as a physician and professor but he has a wealth of practical experience in this highly specialized field upon which to draw.

We learn that carbon monoxide is the most ancient among the known poisons; that it is the perfect asphyxiant and further that it can enter the body only through the lungs. By combining with the red coloring matter of the blood it serves to exclude oxygen from the body.

A. G. A. Safety Contribution

The common sources of carbon monoxide are numerous, including the use of all combustible fuels in the home and industry, as well as the internal combustion engine. Referring to safeguards against the use of defective gas appliances the author states, "In the United States and in Canada, most of the real progress toward greater safety in the use of gas has come from the gas industry," that "real advances in safety and efficiency followed the foundation in 1925 of the testing laboratories of the American Gas Association in Cleveland, Ohio."

A great saving grace in connection with carbon monoxide poisoning is that desaturation of the blood may, if the poisoning has not gone too far, be brought about by a number of methods whereupon the patient recovers as for example by application of the prone pressure method of artificial respiration.

After describing the principal methods, he goes on to state that while the exact ventilations attainable by the prone pressure and other methods of artificial respiration are not known, it is known that Schafer's method can provide sufficient air, according to two references, for as long as 8 to 12 hours, in the absence of any sign of normal breathing. It is but a step from the hand-operated method of artificial respiration to the mechanical devices which have done such an amazingly successful job, especially in connection with patients in whom spontaneous breathing has entirely ceased.

Inhalation treatment where oxygen and oxygen-carbon dioxide mixtures are employed is well described. There is an invaluable chapter by Dr. Julius Sendroy of Loyola University on the "Detection and Determination of Carbon Monoxide in Air and in the Body." This chapter on analytical methods, together with an excellent bibliography, good author index and a most comprehensive subject index rounds out a handbook which should prove of inestimable value to all who are interested in a subject about which so much has yet to be discovered and described. —A. G. K.

Pipe Corrosion and Coatings by Erick Larson, published by the American Gas Journal. That there is ample justification for such a work is evidenced by the author in his preface where he estimates the annual cost to utilities and industrial plants in this country from the corrosion of pipes and other metallic structures to be about one hundred million dollars per year; in the gas and oil industries alone approximately thirty-five million dollars.

The various theories on corrosion and pipe protection as developed by research have been simplified in the light of knowledge and experience from the author's daily work. It is plain to see why he believes that a substantial part of the cost of pipe corrosion and other metallic structures is "economically preventable" and why intelligent and informed thinking must be directed to the vast underground and out-of-sight systems of the industry.

As all men know who deal with soil, galvanic and other electric currents upon underground metallic structures constituting gas transmission and distribution systems there is a variety of theories to explain these phenomena. In the final analysis it is in connection with correction of such conditions that the gas engineer is principally concerned, usually in the direction of mitigation and prevention. Mr. Larson has used excellent judgment in devoting sufficient space to an adequate presentation of the various theories as we now have them and at the same time thoroughly covering the practical application of corrective measures in the light of these theories.

This work comprises 28 chapters consisting of 448 pages so that a most comprehensive coverage has been given. The last chapter prepared by George I. Rhodes of Ford, Bacon & Davis is entitled "Cathodic Protection," ". . . . an electrical method of minimizing or preventing the destructive effect of galvanic corrosion or stray current electrolysis . . . ." To this writer as presumably to many others more thoroughly conversant with the subject, it is of never failing interest to know that Cathodic Protection as above described, i.e., the impressing of a counter electromotive force upon the pipe system will prevent the harmful inflow or egress of electricity to or from the system in question; strange as it may sound it works!

For what is normally considered as a highly technical abstruse subject the reader will be pleasantly surprised to find this an intriguing and interesting handbook that will not readily be laid aside. —A. G. K.

Thermodynamics, Fluid Flow and Heat Transmission by Prof. Huber O. Croft, Head of Department of Mechanical Engineering, University of Iowa, Ames, Iowa.

Professor Croft intended this new book for instruction of senior engineering students, but even the hastiest perusal shows the value of this handy reference book to all engineers in the gas industry. Although the book does not introduce material essentially new, it covers a novel area and brings together under one cover a wealth of engineering theory that has not been correlated as efficiently in other works.

By going through the book systematically, the reader will review his knowledge of thermodynamics and re-establish his methods of dimensional analysis. Then he will be carried through excellent chapters on the thermodynamics of gases and vapors, which lead up to the major portions of the book dealing with the flow of fluids and with heat transmission.

Throughout there are suitable illustrative problems which will greatly assist in the practical application of this material. To be sure, in such chapters as the one on Fluid Flow, the theoretical angle is stressed, whereas in the gas industry problems in flow are usually handled through methods basically empirical in their approach.

The book makes no claim to comprehensive treatment of the problem of heat transmission such as would be found in a text devoted solely to this subject. However, it draws liberally on the most recent sources of information concerning heat transfer problems. From the viewpoint of the gas industry, the treatment of radiation from gases is too brief, and its application has not been extended very far. The material presented is largely derived from Hottel, with some brief additional quotations from Sherman and Trinks. Methods of practically applying this data have not been worked out very completely, particularly for the important problem of furnace operation and furnace design. However, the basic theory is given, and engineers familiar with the techniques involved can readily apply the data.

The author states that a serious attempt has been made to express the constants of all important equations in units and dimensions determined from the logic of dimensional analysis without the introduction of arbitrary multipliers. This is excellent from the scientific viewpoint, but does introduce certain difficulties in practice. For the gas engineers in particular, it would be convenient if all equations were converted to the common engineering units, thus eliminating the necessity for constant checking and conversion into dimensionally consistent data.

The book is 6" x 9", 312 pages, with many charts and tables. Price $3.50. McGraw-Hill Book Company, 330 W. 42nd Street, New York, N. Y. —C. G. S.

Taxation Accounting

S. J. Barrett

At the invitation of the Edison Electric Institute, the Accounting Section of the American Gas Association joined with the Accounting Committee of the Institute in a national conference on utility accounting on December 12, 13 and 14 at the Palmer House, Chicago, Illinois. The accompanying paper by Mr. Barrett and the paper on Accounting Organization by L. L. Dyer, of the Lone Star Gas Company, which appears elsewhere in this issue of the Monthly, were presented at that conference.

By S. J. BARRETT

The Peoples Gas Light and Cake Co., Chicago, Illinois

IN 1912, prior to the advent of the present Federal income tax, taxes levied against utility companies amounted to approximately 5 cents for each revenue dollar. Since that time, as every one associated with the industry is probably aware, the tax burden of utilities has grown tremendously, especially so in the years since 1932. According to statistics compiled by the Edison Electric Institute, electric utilities expended for taxes in 1932, 11.7 cents for each revenue dollar, and in 1937 more than 16 cents for each revenue dollar, an increase in the tax burden during that period of about 40%. Figures published by the American Gas Association show that the tax bill of gas utilities in 1932 was 11 cents for each revenue dollar and in 1937, 13 cents, an increase during that period of about 18%.

Tax Levies Multiply

As is well known, the tremendous increase in taxes is chiefly attributable to the rising cost of government, resulting in the imposition by Federal, state and local governments of a host of levies in new and novel forms and the frequent revision of existing tax legislation, all designed to produce the required additional governmental revenue.

Great as has been the increase in the amount of taxes paid by utilities, there is yet another factor of constantly increasing importance to be considered—the growing cost of complying with the numerous laws which comprise the present maze of tax legislation. Figures showing the extent of the increase in the cost of tax compliance in the industry generally do not appear to be available. Within the experience of almost every utility company, however, there is probably ample evidence that this indirect tax cost—the cost of tax compliance—has kept pace in recent years with the increasing direct tax burden.

As more and more of the revenue dollar of utility companies is taken for the payment of taxes with the passing of each year, management is finding it necessary to devote additional time and attention to the supervision and control of tax matters. Accountants, attorneys, and others, especially trained and qualified in the field of taxation, have become of essential importance in almost every utility organization.

In the case of some companies, the handling of tax matters was formerly considered a function incidental and subordinate to the work of the accounting department, or other unit of the organization. Tax matters have now become of such significance that the centralized tax department, charged with the proper and efficient treatment of all tax matters, has generally become a recognized necessity.

The enactment of each new taxing act has added to the already great volume of returns and reports required to be filed with the taxing bodies and has made necessary the keeping of many additional accounting records. Lack of uniformity in the bases for the determination of tax liabilities under the various acts, and the wide variance in the nature of the information to be included in the returns and reports required, has multiplied the cost of tax compliance many fold.

The Federal income tax, for example, is computed upon the basis of statutory net income; some of the state income taxes upon the basis of gross income, net income or some variation thereof; Federal and state excise and sales taxes upon the basis of revenue, receipts, or value of goods or services produced; local property taxes upon actual values, assessed values, capitalized earnings, or other bases, and so on, with a different method of determination for almost every form of tax.

The new uniform classification of accounts prescribed by the Federal Power Commission and by many of the state regulatory bodies has greatly expanded utility accounting requirements, but even so, the accounting records maintained under the new classification do not provide, in many respects, all of the information necessary for the preparation of the numerous reports and returns required by the separate taxing acts and the determination of the taxes imposed by them.

When the books of account do not provide the needed information, it is necessary, of course, to keep supplementary accounting records, especially designed to provide the information required for tax purposes.

Tax legislation, including the mass of related regulations, rulings and court decisions, continues to become more complex and voluminous. Problems arising in connection with tax matters are continually becoming so intricate and of such vital importance as to warrant the most careful thought and attention of management, tax accountants, and others. The cost of tax compliance is without a doubt, an important phase of the present tax burden.

Income Tax Accounting

Accounting for Federal income tax purposes, to which a large part of the costs of tax compliance are probably attributable in the case of most utility companies, is a subject of common interest, since the Federal income tax is applicable to all companies alike. The accounting problems arising in connection with the Federal income tax are usually more numerous and complex, because of the intricate nature of the Revenue Acts, than the problems relating to state, local and other forms of taxes.

New and different questions of an accounting nature are continually arising as the result of the frequent revision of the Revenue Acts and the income tax regulations, and as the result of new rulings of the Bureau of Internal Revenue and decisions of the Board of Tax Appeals and the Courts. For the present purpose, it appears appropriate, therefore, to discuss some of the more important phases of tax accounting pertaining particularly to the Federal income tax.

The objective of tax accounting for Federal income tax purposes is, of course, the correct determination of taxable net income as defined by law and in accordance with the regulations, rulings and decisions interpreting the various provisions of the law. Taxable net income is a statutory conception of net income and may be different in many respects from the actual net income

as shown by the books of account. The books of account, of course, are the basic accounting records for all purposes.

The process of determining taxable net income is essentially one of making certain adjustments to the actual net income as shown by the books of account. Such adjustments may have the effect of producing a taxable net income that is greater or less than the net income as shown by the books of account and may be classified as follows:

1. Adjustment items which have the effect of increasing Taxable Net Income over Book Net Income—

(a) Items includible in gross income for income tax purposes which have not been recorded as income in the books of account.

(b) Items which have been recorded as expenses in the books of account but which are not allowable deductions for income tax purposes.

2. Adjustment items which have the effect of decreasing Taxable Net Income under Book Net Income—

(a) Items which have been recorded as income in the books of account but which are not includible in gross income for income tax purposes.

(b) Items which are allowable deductions for income tax purposes but which have not been recorded as expenses in the books of account.

Many of these adjustments are merely transfers of items of income or expense between taxable periods or years. Items of income or expense recorded on the books in one year may be required under the law to be reflected in the taxable net income of a prior or later year.

Adjustments in Gross Income

I have already referred to the several general classes or types of adjustments which are ordinarily required to be made to the net income as shown by the books in order to arrive at the taxable net income. Under the classification of those adjustments includible in gross income for income tax purposes, but which have not been recorded as income in the books of account, are the following typical items:

1. Credits to surplus or other non-income accounts in connection with adjustments of prior year transactions, such as in the case of prior years' interest collected in the current year but which was not accrued as income on the books in the prior year to which it was applicable because the collectibility was then doubtful, or for other reasons. Such prior year items may sometimes be retroactively included in the taxable income of the prior years to which they relate, or may be required to be included in the taxable net income of the year in which recorded on the books or possibly some other year, depending upon the circumstances in each case.

2. Refunds of prior year's expenses which have been previously allowed as deductions for income tax purposes, such as refunds of property taxes.

3. Credits to surplus or other non-income accounts representing taxable profits or gains from non-operating transactions, such as sales or other dispositions of investments or physical property.

4. Credits to surplus, bad debt reserves or other non-income accounts representing collections from bad debts charged off and allowed as deductions for income tax purposes in a prior year.

5. The excess of the par value or issuing price of the Company's own bonds or other obligations, reacquired by it for purposes of cancellation, over the cost of reacquisition.

6. Proceeds from the disposition or liquidation of investments previously considered to have become worthless and the cost or basis of which has been previously allowed as a deduction for that reason in some prior year.

7. Items of a deferred nature which are to be taken up as income on the books in subsequent years, but which may be reportable in full as taxable income in the current year. An example of this kind, is the case of profits from installment sales of appliances which do not qualify as such for income tax purposes.

Non-Deductible Expenses

Items which have been recorded as expenses on the books, but which are not allowable as deductions for income tax purposes and, for that reason, must be added back to the net income as shown by the books in arriving at the taxable net income, are illustrated by the following representative examples:

1. Provision for the Federal income tax liability on the current year's income which is not allowable as a deduction under the statute.

2. Amounts charged to expense on the books in connection with additions to reserves for contingent liabilities or to cover prospective losses which have not yet become real. In such cases, deductions are usually not allowable for income tax purposes until such time as the contingent liabilities for which the reserves are provided become real or the prospective losses are actually suffered. Adjustments of this type customarily arise in connection with Uncollectible Bill Reserves, Insurance and Casualty Reserves, Reserves for Loss on Investments and similar cases.

3. Contributions paid in the taxable year to charitable organizations to the extent that the total amount of such payments is in excess of 5% of the taxable net income for the year.

4. Items which are considered for income tax purposes not to be in the nature of ordinary and necessary business expenses, such as the payment by a parent company of the expenses of its subsidiary.

5. Items which, under the income tax regulations, are considered to be applicable wholly or in part to future years and which are required to be amortized over the years to which they are attributable. Expenditures in connection with improvements to leased property, which are usually required to be amortized ratably over the lease period, or the useful life of the property, whichever is shorter, are representative of this type of adjustment item.

6. Items recorded on the books as maintenance expense but representing the cost of replacement of major units of property which may be required to be capitalized for income tax purposes.

7. Losses of controlled subsidiary companies when taken up currently as an expense in the accounts of a parent company.

8. Losses from sales or dispositions of capital assets which are in excess of $2,000, plus the amount of capital gains, if any, realized from other similar transactions.

9. Losses on the abandonment or retirement of depreciable property in such cases where the method of depreciation adopted for income tax purposes is such as does not permit of the allowance for such losses.

The following items are representative of those which may be recorded as income on the books, but which are not includible in gross income for income tax purposes, and must, therefore, be deducted from the net income as shown by the books in order to determine taxable net income:

1. Interest income from tax exempt obligations of Federal, state and local governments.

2. The book income of controlled subsidiaries if reflected currently in the accounts of the parent company.

3. Theoretical interest not actually received such as that involved in the practice of capitalizing interest on idle investment in connection with construction projects.

4. Unrealized appreciation in the value of investments or other assets. Such appreciation does not have to be included in taxable income until such time as it may be actually realized through sale or other disposition of the property involved.

Allowable Tax Deductions

Under the category of items which are generally allowable as deductions for income tax purposes, but which may not be recorded as expenses on the books, are the following typical illustrations:

1. Taxes, interest and similar payments, capitalized or charged to other than expense accounts on the books, which, under the income tax regulations, are permitted to be taken currently as allowable deductions.

2. Items charged to the surplus account which are allowable deductions for income tax purposes. Such items charged to surplus may include payments of taxes, interest or other expenses relating to non-operating transactions.

3. Charges to reserves for expenses or losses actually incurred, such as charges to the Uncollectible Bill Reserve for worthless accounts written off and injury or damage losses charged to Casualty or Insurance Reserves.

4. Losses from abandonments or retirements of physical property, provided the method of depreciation accounting followed for income purposes is such as to contemplate the allowance of such deductions.

5. Items included in deferred charge accounts on the books, but which are currently deductible for income tax purposes,

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Accounting Report Form

COPIES of the annual report form for gas and electric utilities, coordinated with the revised Uniform Systems of Accounts for those utilities, are available from Clyde S. Bailey, secretary, National Railroad and Utilities Commissioners, 7413 New Post Office Building, Washington, D. C. The price to member commissions is $2 per copy and to others, $3.00. Copies of this form now available have been ruled.

Four Campaigns to Promote CP Gas Ranges in 1939

F. M. Houston

FOUR campaigns will carry the story of the certified performance gas range to the American public during 1939, the domestic gas range committee of the American Gas Association decided at a meeting in New York, November 25. Frank M. Houston, sales manager of the Rochester Gas & Electric Corporation, is chairman of the committee and Alan P. Tappan, The Tappan Stove Company, Mansfield, Ohio, is vice-chairman.

The dates of the campaigns are as follows:

Spring Campaign
April, May, June
Summer Campaign
July, August
Fall Campaign
September, October
Holiday Campaign
November, December

Prior to the meeting, over 100 questionnaires had been sent out to leading merchandisers of CP gas ranges asking for suggestions for this program.

National Advertising Tie-in

The American Gas Association's national advertising program will feature 20 range ads during the first eight months of 1939 in such consumer publications as Saturday Evening Post, Good Housekeeping, Woman's Home Companion, McCall's, Ladies Home Journal, American Home, Better Homes and Gardens, House Beautiful, etc. Each of these range ads will acquaint the consumer public with the CP seal and carry messages during this early period of 1939 to over 17 million readers regarding the improved cooking performance of the modern gas range.

For the purpose of CP range promotion, the United States will remain divided into 16 regions under that many Regional Managers who are adding additional associate managers to their staff in order to secure nationwide dealer and utility coverage.

In addition to these new appointments, the Association of Gas Appliance and Equipment Manufacturers is adding to its paid promotional staff additional help at headquarters to assist in the preparation of localized promotional material. A new member will also be added to the field staff to aid the regional managers in conducting regional campaigns and dealer meetings.

The spring campaign will be mailed to dealers and utility companies on Feb. 3 by the Association of Gas Appliance and Equipment Manufacturers, according to R. S. Agee, sales promotion manager. Sales promotion items to assist local outlets in getting their share of the vast market will include an extensive array of sales helps, display material and radio announcement material.

It was also announced that the summer campaign material would contain similar items and be mailed to over 15,000 dealer and utility outlets on May 27.

Work Means Sales in 1939

By F. X. METTENET

Chairman, Commercial Section

EACH December or January, it is the tradition of American business to look ahead to the new year and attempt to forecast the outlook.

In any structure as complicated as our modern economic system, there is an almost limitless number of factors which we must try to consider.

For example, there is the great amount of commercial-statistics and "curves"—prepared by people with various ideas and theories.

We find that one index of general business activity shows an upward move. Another indicates an easing off in certain retail sales. Some classes of construction contracts are shown on the upgrade. Different stock market averages show varying trends. And so on.

What will all this have to do with domestic gas sales in 1939. A great deal perhaps, if we only knew what. But to talk about general economic forecasts in December and January is one thing and to bring them down to the level of day-to-day problems in February, March, April, May and later is another.

Why not look at the matter in this way: we have been through eight of nine hard years now. Until we became more used to it, we —and other businesses too— used to look afar to see whether we were going to sink or swim. Then it became so bad that everybody had to forget about distant shorelines and do a little vigorous paddling of his own. And stay afloat he did.

In more recent years, this unique method resulted in some progress. Many firms profited, even if they did not prosper spectacularly.

This same idea, I believe, will still be good in 1939. Millions of Americans will have money to spend whether or not car loadings go up a little or down a little, whether or not the national income varies one way or another.

For the domestic gas sales organizations which get out and work, therefore, it seems easy to see a satisfactory year in 1939. The business is there to be had —intelligently directed sales and promotional plans plus plain hard work will bring it in and the domestic end of the gas industry will improve its position in 1939.

Home Service Program Reflects Attention to Sales Problems

Gladys Price

THE increasing importance of home service in the sales field is reflected in the comprehensive program of work laid out by the Home Service Committee of the American Gas Association under the chairmanship of Gladys Price, Southern California Gas Co., Los Angeles. While this program is in tentative form, it will be whipped into final shape at a meeting of the committee in Chicago on Wednesday, February 8, the day preceding the Midwest Sales Conference.

The plan of work includes increasing emphasis on the programs and promotion of regional groups. At present, there are home service groups in the following gas associations: New England, Pacific Coast, Southern, and New Jersey. Home service operation will be presented in talks at all of the regional gas sales conferences. In addition, home service has been requested to participate in a two-hour symposium at the annual convention of the Natural Gas Section in Tulsa in May.

Home Service Assignments

Under the general heading of home service operation, two assignments will be made. The final draft of revision of the Home Service Booklet, as prepared by the 1938 committee, will be ready for criticism at the February meeting. A plan by which home service can assist in trade-dealer cooperation will be developed, as the questionnaire of 1938 showed an increasing amount of work along those lines.

The third annual Home Service Conference will be held in the summer of 1939 in southern California, the place and date to be decided at the time of the committee meeting. Due to the importance of enlargement of home service staffs and the necessity of proper qualifications for the profession, it is again proposed to invite teachers and students in home economics interested in this line of work. Home service directors and sales managers also are invited.

A training course for home service within the company organization will be developed, bringing up to date the training course set up by the committee two years ago.

The CP range will be featured in sales promotion. The Domestic Range Committee has suggested that the Home Service Committee carry on a survey on a study of cooking methods. The preparation of a detailed sales-slanted CP demonstration is proposed as an additional project.

In promoting refrigeration, water heating and house heating, the chairman has requested a study of ways of dramatizing this equipment in demonstrations, lectures, talks before women's groups and in home call work. The committee will also continue the partly completed program of summarizing several years' committee and conference ideas on the aid home service can give to the promotion of domestic equipment. This material will be available not only to home service people, but, upon request, to school classes in equipment.

Home Service Counsellor in the Field

New York Power & Light Corp., Albany, N. Y. A meeting of the home service group in this company was called on December 2 by Ralph P. Wagner, sales manager, to discuss CP range promotion. The meeting was held in the service building, with a display of 8 CP ranges. O. A. Ferguson, service advisor, explained the 22 points of the CP range, using the ranges as illustrations. This was followed by a talk by Mrs. Enger, field demonstrator for the Roberts & Mander Stove Company, on how to promote the range in department stores.

The afternoon discussion was conducted by Jessie McQueen who outlined the CP promotion carried on by home service departments throughout the country. Miss McQueen also pointed out specific ways in which different parts of the range could be featured in lecture demonstrations and home calls.

D. C. Home Economics Association. At the invitation of Ruth Sheldon, of the Washington Gas Light Company, a talk entitled "Home Service Aids the Consumer" was given by Jessie McQueen before the District (D. C.), Home Economics Association. About 100 members of this association were present. The meeting was also attended by E. J. Boothby, vice-president of the Washington Gas Light Company, and Mrs. Boothby, A. J. Maloney, sales manager; Wilmot R. Squier, advertising manager; and Earl G. Rogers, manager of the Philgas Corporation, Baltimore.

Preceding the dinner meeting, Miss Sheldon and Miss McQueen participated in a radio broadcast conducted by Mary Mason of the National Broadcasting Company as part of her daily hour program to homemakers.

Bridgeport Home Economics Meeting. Twenty-four teachers of home economics in the schools of Bridgeport were invited by R. A. Malony, sales manager of the Bridge-

(Continued on page 37)

1939 Sales Conferences Planned

INSPIRING and instructive programs characterize the plans of the Commercial Section for Regional Gas Sales Conferences to be held in the Southern-Southwestern, Mid-West and Eastern natural gas districts during the months of February and March.

A. M. Spencer, Georgia Power Company, Columbus, Georgia, is chairman of the committee in charge of the Southern-Southwestern meetings which will be held on the S.S. *Rotterdam* on Monday afternoon, March 20 and Thursday afternoon, March 23. Home service activities have been given a special place at the Thursday morning, March 23, General Sessions' meeting of the Southern Gas Association which sponsors the Regional Gas Sales Conference jointly with the American Gas Association.

The Mid-West Regional Gas Sales Conference will be held under the chairmanship of L. W. Johnson, The Peoples Gas Light and Coke Company, Chicago, at the Stevens Hotel, Chicago, Illinois, on February 9, 10 and 11. Saturday morning, February 11, will be devoted to a Home Service meeting, followed by a luncheon concluding the conference.

The 1939 Eastern Natural Gas Regional Sales Conference will be held at the Roosevelt Hotel, Pittsburgh, Pa., on March 2 and 3, under the chairmanship of R. E. Williams, Binghamton Gas Works, Binghamton, N. Y.

Members of the Association in regions covered by these conferences will shortly receive special notices giving the advance program of topics and speakers.

House Heating Committee Plans Activities

H. G. Schaul

UNDER the leadership of H. G. Schaul, chairman of the House Heating and Air Conditioning Committee of the Commercial Section, a comprehensive program of activities has been laid out for this phase of the Association's program. It includes not only studies of sales plans and policies but also engineering developments in the field of house heating and air conditioning.

The work of the general committee has been divided into subcommittees under the following chairmen:

New Homes—H. R. Carlson, Hartford Gas Co., Hartford, Conn.

Engineering Developments—D. S. Reynolds, Boston Consolidated Gas Co., Boston, Mass.

Improved Selling Practices—H. P. Morehouse, Public Service Electric and Gas Co., Newark, N. J. (This is the second year that Mr. Morehouse has served as chairman of this committee.)

National House Heating Sales Contest—R. A. Malony, Bridgeport Gas Light Co., Bridgeport, Conn.

Domestic Direct Heating—S. L. Drumm, New Orleans Public Service Inc., New Orleans, La.

Following last year's practice, it is planned to release interim bulletins covering various projects whenever developments warrant it.

Gas-in-Industry Story Eloquently Told

FEW national expositions attract a wider variety of buying executives, engineers and plant operating men from all over the country than the National Exposition of Power and Mechanical Engineering—the Power Show—held annually in connection with the yearly meetings of the American Society of Mechanical Engineers and the American Society of Refrigerating Engineers. The 40,000 industrial experts who customarily attend this show represent, it is estimated, at least 58 different and distinct industries—every one of them offering a fertile field for the use of gas in one or more branches of operation. You bet the gas industry gets in on the Power Show—and in a big way.

This year number thirteen in the parade of Power Shows was held at Grand Central Palace, New York City, December 5 to 10, and the Industrial Gas Section of the American Gas Association, jointly with The Brooklyn Union Gas Co. and Consolidated Edison Co. of N. Y., Inc., took over floor space to the extent of 616 square feet with 44 feet of frontage on a main aisle near the center of the first floor. In this area was assembled representative gas-fired equipment, produced by 10 leading manufacturers and covering a surprisingly broad range of industrial gas heating units.

The variety of the displayed apparatus indicated the tremendous scope of gas in industry—and it was just that phrase, "Gas in Industry," which was used to introduce visitors to the display. Located on a wing extending high into the aisle so as to be visible along the length of the hall, the theme was proclaimed boldly in illuminated letters.

Rich plane areas of blue, salmon, yellow, and brown gave strength and character to the walls and decorations; and a top-illuminated canopy, behind the main pillar and flanked by two cushioned benches, provided ample space for comfortable private discussions without interfering with circulation through the booth or visibility of the display from the aisle. The severely plain pillar carried the name of the American Gas Association in a front recess, and the names of the two cooperating utilities on its sides. Over each side of equipment was an arrow-shaped placard extending down from the industrial gas slogan, "The Trend Today Is to Gas." It identified the equipment, outlined the type of job for which the unit was designed, and gave the manufacturer's name.

The display was designed and executed by the Art Department of Consolidated Edison Co. and was manned at all times by relays of men from that company, The Brooklyn Union Gas Co., and the exhibiting manufacturing firms. As the last of 6 displays at national industrial expositions sponsored this calendar year by the Industrial Gas Section of the Association, it was organized by that Section's Committee on Displays, chairmanned by D. W. Chapman.

40,000 plant men from 58 industries here inspected 14 kinds of industrial gas equipment in six days

All planning was done by a working committee consisting of R. V. Howes and H. W. Butterfield, Consolidated Edison Co., Frank T. Herty and A. L. Palmer, The Brooklyn Union Gas Co., and Eugene D. Milener, American Gas Association.

Dowtherm Gas Boiler Courts Discussion

To appreciate the wide gamut of industries represented in the attendance at the National-Power Show is to understand why such a diversity of industrial gas equipment was on display.

Prominent was the 5 bhp. Dowtherm gas boiler shown by Eclipse Fuel Engineering Co. This unit, for all the world like an ordinary gas-fired steam boiler but of much heavier and specialized construction, uses in place of water for making "steam," the

sweet and pungent amber-colored by-product, diphenyl diphenyloxide. By using this liquid or its vapor, temperatures up to 650° F. can be attained at slightly over atmospheric pressures, whereas with steam such temperatures would require prohibited pressures up to 2000 lbs. per sq.in. in all lines and appliances. Because of the high vapor temperatures and the facility with which the Dowtherm liquid works through even slightly porous castings, it is necessary to employ forged steel fittings, double extra heavy piping, and dense metal "steam" receptacles with Dowtherm boilers. All rivets and joints in the tank and tubes of the boiler are welded for these same reasons.

Being relatively new and revolutionary in principle, Dowtherm boilers have not yet seen the limit of their application in industry and commerce by any means, but have already earned a place for themselves in the heating of plastic molding dies, special hot plates, varnish and cooking kettles, and certain metal processing equipment. Where space is at such a high premium or open flames are so hazardous that independent direct-fired equipment is not feasible, and yet temperatures upwards of 500° F. are required, Dowtherm offers a convenient solution. Many cases of its economic installation for work well under 500° F. are on record. Kettle cooking of pie fillings at 270° F. is an example.

Although the liquid sells for from 16 to 24 cents a pound, it lasts almost indefinitely with proper boiler and piping installations, and any leaks in the system are readily detectable by odor.

Also in the boiler line, a conventional 7 bhp. fire-tube steam boiler by Mears-Kane-Ofeldt, Inc. was displayed. Gas-fired and completely automatic with water level and pressure actuated input control, this unit operates with a minimum of attention and maintains a constant pressure head irrespective of draw, within limits. Industrial processing offers a thousand and one uses for steam, some familiar, others special and ingenious. The gas-fired steam boiler is a versatile tool for industry—for steam can be a source of power, a source of heat, a source of moisture, or a "chemical" in its own right.

At right—Unit heater, heat-treating furnace, Dowtherm boiler melting pot and burners—all in one look

Sound Engineering Characterizes Heat Treating Units

Heat-treating equipment was represented by products of American Gas Furnace Co. and Charles A. Hones, Inc., each with two units on display. Many a passerby stopped before the trim No. 180 continuous clean-hardening furnace exhibited by the former firm. Designed for heat-treating tiny parts such as screws, needles, pen points, springs, etc., this gas-fired appliance swallows 50 pounds of bulk parts an hour and jars or shocks them little-by-little along the length of a ridged nichrome muffle.

At the inlet end of the muffle a raw gas injector and an adjustable baffle act to maintain non-oxidizing conditions within the muffle; at the outlet end the parts drop through a vertical duct into the quench tank. The tank is sufficiently filled to seal off the end of the duct and prevent air leakage back into the muffle. The furnace is completely automatic, and as simple as it is effective. A small die-hardening oven furnace by American Gas Furnace illustrated special manually operated equipment.

The feature of the Buzzer pot furnace and 2600° F. high-speed full-muffle bench furnace loaned by Charles A. Hones, Inc. was that neither require blowers or power. In both, atmospheric gas burners are shrewdly engineered to do jobs frequently delegated to high pressure gas or blower systems. It is noteworthy that the pot furnace, capable of 1800° F., is fired at the top of the combustion zone near the rim of the pot, the products of combustion spiraling down to the flue outlet.

New Ideas in Convection Air Heaters

A flexible tool indeed in the hands of any industrial gas load-builder is the convection air heater. That which Gehnrich & Gehnrich, Inc. had on display is unusual in that it contains neither insulation or refractory linings, but consists of three concentric steel shells between which the make-up air passes back and forth as it works its way from the cold outside pass to the fired core passage. Unobstructed flow of the recirculated air directly through the center of the unit is a feature—as is the reversed-cone design for the chrome or nichrome tunnels into which the two opposed burners fire. These cones permit reduced gas velocities and prevent cross drafts at the burner tips—all to widen the range of turn-down. The unit on display was installed vertically to demonstrate versatility of application.

For force drying, tempering and drawing, annealing, baking of all kinds, and printing press work, gas-fired convected air equipment is rapidly gaining in popularity. It offers real load possibilities in almost any industrial area. For example the new four-color printing process developed for printing one of our largest weekly magazines (wherein all four colors are printed practically simultaneously on both sides of the paper at once) utilizes 7 Gehnrich gas-fired convected air units totaling 13 million B.t.u. per hour in input to supply the hot air for the amazingly rapid ink drying. Similar units operate in other installations at air temperatures all the way from 150° F. to 1000° F.

Brass Melting with Improvements

In the non-ferrous metal melting field, a 450 lb. capacity tilting crucible furnace manufactured by Campbell-Hausfeld Co. won much attention. Four tangential round-nose tunnel burners fire into the massive shell near its bottom. All four draw premixed gas and air from a common manifold below the shell, the manifold being supplied from a 4-inch connection on the tilting shaft connected to a low pressure proportional mixing set. This assures fuel mixtures which can neither oxidize nor "gas" the metal. Five inches of insulation

Keys to new industrial loads—via steam, convected air and tilting pot firing

topped with 2 inches of pre-burned silicon-carbide line the shell.

The swinging top is a fired disc of silicon-carbide refractory 3 inches thick with the flue and charging hole in the center. A standard long-lip crucible is used with the furnace. This Goliath is characterized by the better heat distribution and excellent efficiency attained through the use of four burners rather than one—and it can be fired while pouring, and tilted with the cover on or off.

Unit Heaters, Burners, Controls, Round Out Gas-in-Industry Story

Nor must we forget the huge load represented by industrial and commercial space heating. This end of the "Gas-in-Industry" story was eloquently told by a new Humphrey unit heater, product of General Gas Light Co. He who came in to see equipment for heat treating, baking, steam generation, or other product processing applications of gas, also learned a thing or two about how to keep his shops and workmen warm most economically. If his thoughts clung stubbornly to products and processes, he was told of what unit heaters can do for all manner of goods while in storerooms and warehouses.

For the engineer who fashions his own heating equipment along highly specialized lines and buys gas combustion and control fittings separately, a wide array of industrial gas burners and controls was on exhibit. On the display table provided by Surface Combustion Corporation were: rugged lava tip pipe burners, tunnel burners, low pressure tunnel velocity burners, impact burners, flame retention nozzles, gages, governors, and a gas-oil burner especially designed for forge furnaces. The Partlow Corp. displayed high quality temperature controls suitable for any variety of industrial gas heating set-ups. One unit was dial setting, another indicating, and a third recording.

In the ribbon burner line, Ensign-Reyn-

(Continued on page 37)

One gas company and six manufacturers go after the commercial cooking business

Restaurateurs View Impressive Gas Display in Washington, D. C.

THE hotel and restaurant load is one of the most profitable on the gas industry's lines. Its seasonal variation is small; its size is considerable; its rate brackets are favorable; and its competitive position is excellent. Sales effort in the hotel and restaurant field is well rewarded—at least so thinks the Washington Gas Light Company and the six commercial gas appliance manufacturers who joined forces last week to stage an impressive gas display at the Southeastern Regional Restaurant Convention and Exposition, Mayflower Hotel, Washington, D. C., Dec. 5, 6 and 7.

Sponsored by both the National and the Washington Restaurant Associations, this southeastern regional meeting drew over 5,000 restaurateurs from 27 states and placed before them the displays of 80 exhibitors, in addition to a 3-day diet of speeches, demonstrations, and business discussions.

More than holding up the gas end of the exposition in a cooperative booth, fully 64 feet in length and extending along one side of the Mayflower's main-lobby "Peacock Alley," was gas-fired restaurant equipment manufactured by American Stove Co., Detroit Michigan Stove Co., Standard Gas Equipment Corp., J. C. Pitman & Sons, G. S. Blodgett Co., and General Gas Light Co. The very latest in heavy duty ranges, short order equipment, deep fat fryers, deck ovens, unit heaters, space heaters, and radiant broilers—all gas-fired—was arrayed in two long wings extending right and left of one of the main meeting room entrances. The legend, "Gas . . . . The Ideal Fuel," spread-eagled both lines of appliances.

Credit for a fine sales job in behalf of gas and gas appliances in the restaurant goes to Henry M. Brundage, Jr., F. B. Hatcher, and Thomas M. Offutt, all of the Washington Gas Light Company, who organized the gas display, as well as to the representatives of that utility and the six exhibiting gas equipment manufacturers who manned the exhibit in shifts to answer the queries and stir up the interests of the visiting restaurateurs.

INDUSTRIAL & COMMERCIAL ADVERTISING FOR JANUARY

The Advertising Committee of the Industrial Gas Section, J. P. Leinroth, chairman, and F. B. Jones, vice-chairman, announces that full-page advertisements will appear in the following trade and business magazines during the month of January:

Magazine	Date	Topic
American Restaurant	January	Gas for Commercial Cooking
Bakers Helper	January 21	Improved Bake Ovens
Bakers Weekly	January 14	Improved Bake Ovens
Ceramic Industry	January	Gas in the Ceramic Industry
Food Industries	January	Gas for Heat Processing of Foods
Heat Treating & Forging	January	Gas for Heat Treating Metals
Hotel Management	January	Gas for Commercial Cooking
Industrial Heating	January	Gas for Heat Treating Metals
Iron Age	January 26	Gas for Heat Treating Metals
Metal Progress	January	Gas for Heat Treating Metals
Metals and Alloys	January	Gas for Heat Treating Metals
Modern Hospital	January	Gas for Commercial Cooking
Steel	January 23	Gas for Heat Treating Metals

Gas Corn Popper

A NEW gas-heated corn popper of large capacity has been placed on the market by C. Cretors & Co., Chicago, Illinois. Industrial gas men who have examined it and who realize the size of the wholesale pop corn market, believe it will be a valuable tool in further building up the year-round gas load in this field.

Explosion Pressures for Combustible Gas-Air Mixture—An Abstract*

By JESSE S. YEAW and LOUIS SHNIDMAN

Rochester Gas and Electric Corporation, Rochester, N. Y.

A SEARCH of the literature was conducted for the purpose of collecting experimental data relative to the explosion pressures for various combustible gas-air mixtures. The object of the search was to obtain practical information concerning the probable explosion characteristics for various gaseous fuels manufactured and distributed for industrial, commercial, and domestic uses.

When a mixture of gas and air inside a closed chamber is ignited, inflammation proceeds throughout the mixture at a rate depending upon many factors. Heat is produced and pressure develops within the chamber. At the same time some of the heat developed is being absorbed by the unburned gases and by the walls of the vessel itself, thus tending to lower the temperature. At some time during this process these two forces balance, and the pressure ceases to rise. This point is known as the "maximum pressure" and the elapsed time between the initial ignition and the maximum pressure is known as the "time for the explosion."

After maximum pressure has been attained, the rate of heat loss to the walls of the vessel is greater than the rate of heat generated within the chamber, and the gas therefore cools and the internal pressure decreases. If the vessel is allowed to cool to its original temperature, the pressure inside the chamber will also become equal to the original pressure, provided no contraction due to chemical rearrangement has taken place.

Some of the factors which influence the rate of inflammation and the maximum pressure developed, include:

1. Composition of the combustible gas itself.
2. Combustible gas-air ratio in the mixture.
3. Physical constants of gas and of air, i.e., densities, specific heats, heat of combustion, heat capacities, etc.
4. Physical constants of the products of combustion, and the changes in these values with temperature.
5. Presence of foreign diluents such as H_2O, N_2, CO_2, excess O_2, argon, etc.
6. Size and shape of the explosion vessel.
7. Material used for construction of the vessel.
8. Surface conditions inside and outside the vessel including the area exposed.
9. Initial temperature and pressure of the combustible mixture.
10. Position of point of ignition.
11. Turbulence in the mixture during inflammation.
12. Extent of dissociation of combustion products.
13. Heat losses by direct radiation and by conduction.
14. Pre-ignition known as "knock" in which part of the gases are ignited beyond the normal flame front.
15. "After burning" in which part of the gases are burned only after maximum pressure has developed.

Various attempts have been made from time to time to calculate the explosion pressures for certain mixtures of combustible gas and air using the fundamental characteristics of the gases. In most cases only the simplest types of mixtures have been studied, but even so the results have not been very satisfactory. The number of factors involved in the complex phenomena, and the relative effect of these factors upon the pressures developed are not sufficiently well known. The application of such methods of calculation to more complex industrial fuels is not feasible at the present time.

From a practical point of view, however, it may not be necessary to consider such methods. Most industrial fuels are composed, in whole or in part, of the combustibles, H_2, CO, CH_4, C_2H_6, or oil vapors, and in some mixtures the inerts N_2, CO_2, excess O_2, or water vapor appear. The explosion pressure curves for mixtures of these pure gases in air are shown on Figure I.

These curves are quite similar in several characteristics. They all rise very sharply from the lower explosive limit, pass through a maxima a little beyond the point of the theoretical combustion mixture, and descend rapidly to the upper explosive limit. Moreover, the maximum pressures developed range from 100 to 115 lbs. pressure (gage) with the exception of that for C_2H_2 which rises to 129 lbs. per sq.in. From a strictly practical standpoint, relative to the possibility of hazardous air-gas mixtures, the

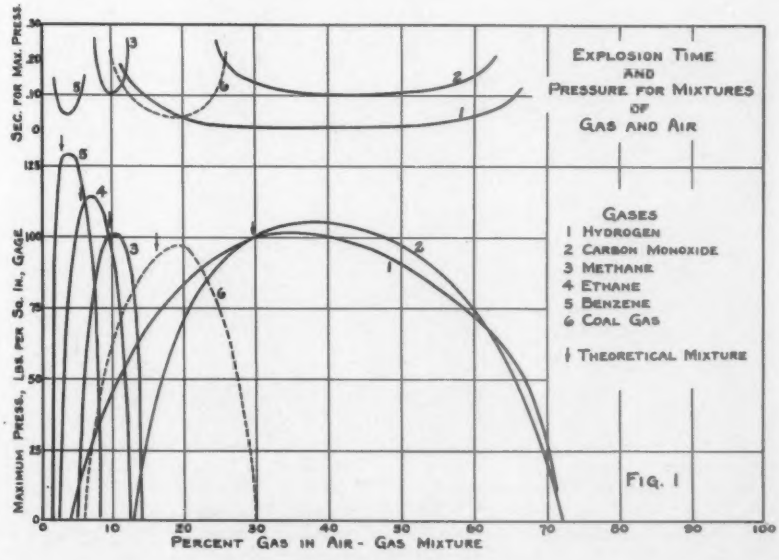


FIG. 1

* Publication of the full article will be made at a later date. In the meantime, anyone interested may secure a copy from the authors.

difference between 100 lbs. per sq.in. and 115 lbs. per sq.in. is of minor consequence. The effect of an industrial explosion would be essentially the same regardless of the combustibles, individually or collectively.

Similarly the curves on Figure I showing the time required for the development of the maximum pressures are very much alike. The periods are, for all practical purposes, almost negligible. The faster burning gases attain the maximum pressure somewhat quicker than the slower burning gases.

In view of the general characteristics of the explosion curves for the various pure gas-air mixtures, it appears that an explosion curve suitable for all practical purposes might be readily predicted when the explosive limits of the gas are known.

Some experimental explosion pressure data for mixtures of certain manufactured gases in air are available in the literature. These gases varied from rich coal gases containing but 2 to 4 per cent inerts with a heating value of about 650 B.t.u. per cu.ft. to carburetted blue gas containing as high as 40 per cent inerts and a heating value of about 500 B.t.u. per cu.ft. In spite of this fact the maximum explosion pressures ranged between 85 to 95 lbs. per sq.in. The average explosion pressure curve for these mixtures is shown by the dashed line on Figure I.

The proposition, that explosion curves suitable for practical purposes could be constructed using the explosive limits of the gas as a starting point, is thus reasonable. The estimation of the explosive limits themselves from the analyses of the combustible gas has already been shown to be feasible. The explosion curve for natural gas, which is usually composed largely of methane or of methane and ethane, can be assumed to lie close to those for these two gases, both of which are included on Figure I.

WRINKLES DEPARTMENT

Some of the megrims you have solved in your laboratory or plant through the ingenuity of someone in your organization are still headaches to the rest of us. If you don't want to patent them, they would be a useful palliative to someone else and we will be glad to publish them.

To start the ball rolling, we submit the following:

"Bending Copper Tubing"
"How to Save Money on Charts"

We want your contributions, trifling or momentus, and the reward will be the exhilaration which comes from seeing one's name in print and the knowledge that somebody has profited by your suggestion.

Send contributions to H. J. Meredith—care of Koppers Co.—Kearney, N. J.

BENDING COPPER TUBING. Henry Kehmna, Koppers Company, Seaboard Division, Kearny, N. J.

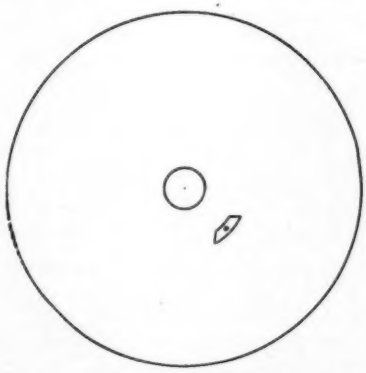
There are various devices and gadgets for facilitating bending copper tubing. Did you ever bend a piece of tubing using the familiar spiral wire tube bender and then find that you could not get the bender off? The following procedure will help you out of many difficulties where sharp bends are to be made:

Wind the tube to be bent with a No. 14 gage soft copper wire so that the coils touch throughout the length of the winding. Bend the tube as desired and remove the wire. This will give a smooth bend without kinks and with no strain on your vocabulary.

HOW TO SAVE MONEY ON CHARTS. Henry Kehmna and A. E. O'Keeffe, Koppers Company, Seaboard Division, Kearny, N. J.

It is possible to make a very satisfactory palimpsestic chart, that is, one which can be used over again, by adopting the following procedure:

Spray the chart with a water-white viscose lacquer. Cut a hole in this chart (as indicated on the sketch) so that the clock may be wound without removing the chart. This is important because repeated removal of the chart from the instrument enlarges the hole and makes it impossible to center it. A viscose sponge, which can be purchased at any photographer's supply store, cut up into small cubes (about 1½" square) make excellent sponges for wiping off the ink. They should be moistened and squeezed as dry as possible before use. Charts so treated can be used for at least 6 months. It is advisable to spray the lacquer onto the chart and consequently, from the point of view of economy, several charts should be sprayed at once. It is advisable to use two coats, allowing to dry before applying the second.



Slot cut in chart to permit winding clock without removing chart. Clock must be wound at same time each day, plus or minus 15 minutes

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TAXATION ACCOUNTING

(Continued from page 29)

for example, the cost of revenue stamps charged to unamortized bond discount and expense on the books which is being amortized over the term of the bonds to which they relate.

6. Unamortized discount and expense on bonds retired in the current year which, on the books, is being amortized to expense over the term of a refunding bond issue. Under the income tax regulations, unamortized discount and expense on bonds is an allowable deduction for the year in which the bonds are retired.

7. Premiums paid on the Company's own bonds purchased for retirement, which, under the income tax regulations, constitute allowable deductions for the year in which paid.

I should like to emphasize again that the several items which I have mentioned under the various classes or types of adjustments ordinarily required to be made for income tax purposes are in no sense intended to comprise an exhaustive list. I have purposely not attempted to treat fully with the detailed accounting procedures ordinarily involved in the adjustment of the items mentioned for the reason that justice could not be accorded that subject in this rather broad discussion of taxation accounting. Volumes have been written with respect to such detailed accounting procedures and there is doubtless need for additional volumes to be written.

The question is asked as to whether there are possibilities for economies in taxation accounting. Simplification of tax laws and the related regulations and greater uniformity in the method of determining the tax liabilities under the various laws, would, no doubt, contribute much toward minimizing the costs of tax compliance. Any movement having such an objective, should certainly have the encouragement and support of the utility industry.

Tax accounting costs also may be minimized if the books of account and other basic accounting records are so maintained that they provide, so far as is practicable, the information necessary for the preparation of tax returns and reports. This requires constant close cooperation between the Accounting Department and the Tax Department to the end that analysis work may be reduced to a minimum. Such coordinating of accounting requirements for tax and other purposes promotes efficiency in the handling of tax matters and eliminates duplication of effort.

Perhaps one of the most fertile fields for effecting tax accounting economies in any organization, is in the centralization of the handling of and responsibility for all tax

matters. Such centralization is conducive to efficiency and uniformity in the preparation and filing of the various required returns and reports, and places the responsibility for the proper treatment of tax matters in the hands of persons especially qualified and trained in that field.

GAS AT NATIONAL POWER SHOW

(Continued from page 34)

olds, division of American Radiator Company, offered quite a variety, along with convenient gas compressors and blowers to use therewith. Circular models offered the maximum in turn-down for those who would fire varnish kettles or the like. One was specifically designed for the new commercial gas refrigeration units by Servel, Inc. Another straight ribbon burner boasted a simple adjustment which permits the operator at any time to increase the heat output of the burner at either end and reduce it at the other.

The new Ensign-Reynolds gas soldering furnace topped off "a balanced diet for industrial gas users." Unique is this bench unit because it precludes the formation of scale upon soldering "coppers"—and thus saves radically in forging, filing, tinning, and replacement of irons. Its secret lies in the fact that it heats from the heel of the iron rather than from the tip, and maintains non-oxidizing conditions about the copper soldering heads at all times.

Finally, whenever an engineer or executive withdrew at last from the "Gas-in-Industry" show, he found Johns-Manville and its industrial insulation across the aisle. His reaction surely must have been, "Now that I have learned how to supply the heat —let me see how to save it."

Results Promise New Sales

Results from the show? Indeed! Good leads and orders were obtained—and many a valuable acquaintance was made or renewed. The show was particularly productive because of the five evening sessions it offered in addition to the six day-long stands. In the words of Robert V. Howes, "The show in general was on a much higher level than ever before."

When 40,000 plant men from over 58 industries see, in less than 6 days, 14 different types of industrial gas equipment manufactured by 10 companies, you've done a selling job than can mean husky new non-residential gas loads.

HOME SERVICE PROGRAM

(Continued from page 31)

port Gas Light Company, to attend a meeting at the gas company on Tuesday, December 13.

Betty Stafford, home service director, was hostess at the tea held in the home service section of the sales floor. At a discussion following, foods prepared using different features of the CP range were shown to the guests.

Jessie McQueen of New York, assisted Miss Stafford in the discussion of the use and operation of gas equipment in school laboratories.

State Teachers College, Framingham, Mass. On Monday, December 19, the students in the home economics department met for a discussion by the home service counsellor of the American Gas Association of the broadening uses of home economics training. Mrs. Eleanor Kingsley of the Worcester Gas Light Company at Framingham, a graduate of that school, also was present and discussed with Lucile French, head of the department, some of the plans being arranged by which studies in equipment will be presented in the home economics course.

ACCOUNTING ORGANIZATION

(Continued from page 18)

it can be easily located and compared with other statements on file with the commissions.

And finally, the most important problem confronting the accounting executive in connection with the rendering of information to the management, regulatory commissions, or the public is the proper organization or line of control exercised by him over the preparation and issuance of all statements and reports, regardless of the department from which rendered. In my opinion, the proper organization for the dissemination of accounting information in its various forms to the several regulatory bodies or the public will do more to instill public confidence and trust in the company than any other policy that might be adopted.

In the distribution of this information, all statements should be of a uniform character and compiled in such a manner as to be readily understood by the average layman. The best way to accomplish this purpose and prevent overlapping of accounting organizations in their relation to other departments, in my opinion, is for the chief accounting officer of the company to be responsible for and have personal supervision and jurisdiction over all statements, records or reports rendered by the company. This would result in the simplification, standardization, and coordination of information furnished by the company, whether it be designed for submission to the management of the company, to a regulatory body, or to the public.

Baking for 9000 Daily Means Gas to New York Firm

Among modern commercial kitchens few can top this all-gas beauty of S. H. Kress & Co., Fifth Ave., New York City. Here in the bake shop alone are eight gas oven sections of the latest brick-lined multiple-heat-conduit type. So pleased was Kress with the first two sections (rear) that two more orders for three sections each quickly followed. Note the cleanliness and functional convenience attainable in commercial all-gas kitchens.

(Continued from page 8)

dure is a substitute for competition under conditions in which a full degree of competition cannot expediently exist. The theory is that if society grants exclusive rights, then the price factor must be fixed by authority, there being an absence of the usual competitive mechanism for price determination.

In practice, the creation of a substitute is not apt to be wholly effective unless the substitute has all the attributes of the element replaced. In the case of rate regulation, the functional aspect of price is apt to be overlooked and the flexibility, and attendant adaptability, of a competitive price structure is not readily duplicated. Rate regulation, therefore, does not always work out to the advantage of the full complement of desirable economic objectives.

Protective Regulation

Rate regulation has prevailingly developed in a form that may be termed *protective* regulation. Such regulation has been designed to reconcile the interests of the consumer with those of the investor, on the theory that the consumer should be provided with the service at the lowest price consistent with a fair return upon the value of the property employed. But in the practical application of utility regulation, the burden of proof has been customarily placed upon the utility to justify the compensation allowed, and as a check upon the correctness of commission rulings, the courts have followed the practice of testing validity principally by the qualification of the absence of confiscation.

Thus the objectives of rate regulation have come to be narrowed to negative considerations of protection: on behalf of the consumer, against exaction; on behalf of the utility, against confiscation. On this plane the contest has centered and the whole field of rate regulation has been marked by a conflict of interests in which social theories and legal abstractions have taken precedence over economic considerations.

The greatest deficiency in the practice of rate regulation, accordingly, is the absence of a broad concept of the industry as an economic organism, whose interests as a whole should be harmonized with those of the consumer, the investor, the worker, and the management; for lacking this coordination, or if the requirements of the industry as a whole are violated, then the long-term interests of those immediately concerned are not best served, growth is interfered with, and the potential standard of living is lowered.

It is the theory and practice of what might be termed *protective rate regulation* that a fair rate of return upon the fair value of the property employed be allowed, but these terms have no precise meaning, and the manner in which "fair rate of return" is defined and "fair value of property" is measured leaves considerable latitude for wide divergence in rulings. The profitability of the industry is the product of the two factors, and varies according to the allowance fixed for each, which in turn depends upon the principles adopted in arriving at the rate as well as the rate base.

The natural gas industry is a mass production activity of integrated character and is itself interested in reducing the cost of its service to the consumer in order to enlarge its business. The requirements of growth and needs for technological progress, however, demand steady accretions of new capital and the stimulus of a return adequate to this end is essential.

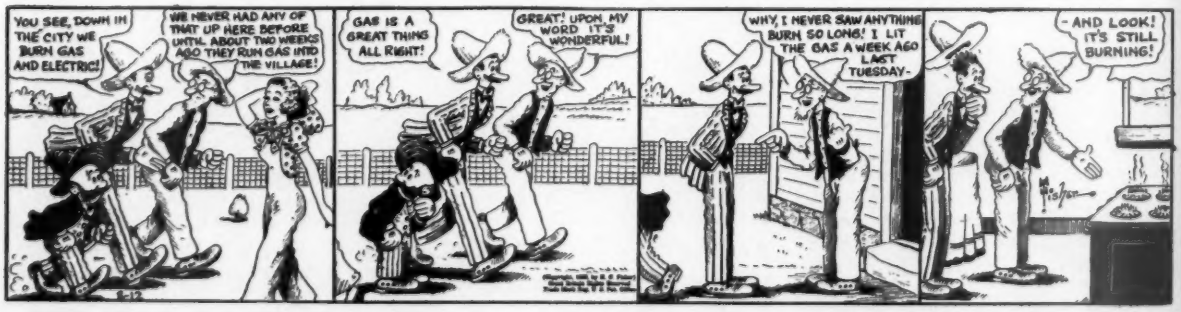
Rate of Return

Utility rates some years ago were in general such as to give a rate of return of 7 to 8 per cent; now the range is 6 to 7 per cent. Recent court decisions affecting the rate of return for the natural gas industry center around 6½ per cent. It is conventionally conceived that such a rate of return is composed of pure interest, compensation for risk, and a reward for efficiency, although the last element is not universally accepted as valid and segregation of the total rate into its several components is not usually specified.

A broader and more productive formula might be regarded as one embracing the following three elements: pure interest, compensation for risk, and a residual element essential to sustain a dynamic quality in the industry. This residual element is not needed in decadent industries, but for such an active industry as that under consideration the advantages of originating and retaining for reinvestment a substantial part of its capital requirements are important, for if the extractive industries do not create capital on balance, must not the needed capital be

While Gassing About Gas I "Gas" the Rube Didn't Figure on the Gas Meter

by Bud Fisher


YOU SEE, DOWN IN THE CITY WE BURN GAS AND ELECTRIC!
WE NEVER HAD ANY OF THAT UP HERE BEFORE UNTIL ABOUT TWO WEEKS AGO THEY RUN GAS INTO THE VILLAGE!
GAS IS A GREAT THING ALL RIGHT!
GREAT! UPON MY WORD IT'S WONDERFUL!
WHY, I NEVER SAW ANYTHING BURN SO LONG! I LIT THE GAS A WEEK AGO LAST TUESDAY-
- AND LOOK! IT'S STILL BURNING!

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derived from industries less vigorous, or be provided from inflationary processes, or else go lacking?

One may venture, therefore, to bring forward the concept of *creative rate regulation,* especially at this juncture when the natural gas industry faces a broader and more pervasive type of rate regulation than it has heretofore encountered. If rate regulation is a substitute for competition, and if furthermore a rate structure with its attendant rigidity must operate in lieu of a flexible system of market prices, then care must be taken that the functional nature of prices shall not be subordinated to the immediately desired objectives, which usually are concerned with persons rather than abstract conceptions.

Rate regulation is a form of price-fixing under official sanction and it is notorious that price-fixing schemes suffer from their inability or disinclination to take into consideration the economic forces set up by the prices established. Price-fixing tends to establish prices that are too high and hence too stimulating to expansion; contrariwise, rate-fixing tends to set prices that are too low, or else threatens to do so, and hence is apt to create conditions hostile to proper expansion and growth. The motives in the two instances are different, and yet in a deeper sense not unlike—either uneconomic-mindedness or a willingness to sacrifice the long-term good for a short-time advantage.

If the creative element is to be brought into the rate making formula, then one must be concerned with a rate that will: (a) tend to further the conservation of the resource, (b) stimulate new technology and its application, (c) further the growth of the industry, by enlarging consumption and attracting or creating the requisite capital for expansion, and (d) introduce an element of flexibility, or in lieu thereof a factor of safety, in order to maintain resiliency in the business cycle—in short, a rate *functionally sound.*

Concluding Observations

We are living in a period when profound social forces are at work and the whole economy is in a phase of rapid flux. Considerations in respect to the distribution of wealth are in the forefront of all public discussions, while the methods of creating wealth are relegated to second place or taken for granted. The great resource industries are wealth-creating activities, for they bring to the service of mankind in usable form the products of nature which are worthless if not vitalized into action by aggregates of technology, capital, and man-power.

Throughout this paper runs the theme of treating an industry as a growing, living, economic organism engaged in doing a job. Of course there are flaws, the need for "reforms" are clearly admitted; but vital industries are constantly engaged in perfecting their activities on all fronts: they have to, else they go backward.

It is an important fact that an industry is greater than the sum of its corporate parts, just as the human organism is something more than the aggregate of the chemical elements that compose its body. There is a plus-over part that acts as a spark or catalytic agent and this element is the constituent of greatest value to society.

HOT WATER HARRY

(Continued from page 13)

Secured." Papers will be received by the committee up to April 1, and the awards will be announced May 1. It is expected that the prize winning papers will constitute a real contribution to the gas industry on this most important subject.

There will be no limitation on the number of words included in any one of these papers, so every contestant will be able to treat the subject as thoroughly as he sees fit. Awards will be based entirely on the excellence of the paper. The judges will not be influenced by any record that the company with which the contestant is associated may have made in the sale of automatic gas water heaters.

In other words, the answer as to how the water heating load may be secured is not necessarily a recital of how the load is being secured in any particular company. It is hoped that arrangements can be made for a digest of at least one of the winning essays to be presented at the 1939 A. G. A. Convention.

The Prize Essay Contest for Dealers will be on the subject, "What the Promotion of Automatic Gas Water Heaters has done for My Business." Here we will have the subject discussed from the viewpoint of the profit motive, and the publicity which will be given the winning papers in the trade journals should go far to convince every plumber-dealer that a sustained effort on his part to secure gas water heater sales will make his balance sheet at the end of the year much more pleasant reading.

MODERN GAS WATER HEATERS

(Continued from page 12)

tude may be noted, and the group as a whole are evidently quite research minded. The American Gas Association through its Committee on Domestic Gas Research, of which F. J. Rutledge is chairman, is carrying on currently a program of water heating research.

This project is receiving the very active support of the Manufacturers' Technical Advisory Committee appointed by the Association of Gas Appliance and Equipment Manufacturers and headed by L. R. Mendelson. This cooperative research program together with the individual efforts of manufacturers should result in new and greater achievements in the future.

Three publications are recommended to those desiring a further and more detailed discussion of water heating equipment and installation problems. The first, written in popular language but very instructive, is "Household Gas Water Heating" by Charles W. Merriam. It may be obtained from the American Gas Journal, Inc. The other two are for the more technical minded and may be procured from the American Gas Association in New York. They are the "Water Heater Manual" and "Water Heating."

Furnace Schools To Be Held for Dealers

FOR the sixth consecutive year heating jobbers and dealers are being offered the opportunity of attending air conditioning schools conducted by the Fox Furnace Division of American Radiator Company.

The first school will be held at Birmingham, Alabama. Classes will be in session for three days only, January 17, 18 and 19. Most of the time will be devoted to the engineering and installation of air conditioning systems.

Pacific Gas Advertising to Continue

H. L. FARRAR, president, Pacific Coast Gas Association, announces that continuation of the cooperative advertising program of the Association during 1939 has been approved by participating companies. This will be the eleventh continuous year of this promotional effort.

Its original purpose was to carry a gas sales message in media of coast wide circulation in which no one gas company could advertise without paying for circulation outside of its service territory. This purpose has been strictly adhered to with annual adjustments of media and coverage to meet changing conditions. For several years the Association's advertising was the only gas message in these publications but now it is being supported by the advertising of several appliance manufacturers, and this tendency increases each year.

The Association's campaign is planned and executed by A. C. Joy, Pacific Gas and Electric Company, and J. S. Spaulding, Southern California Gas Company. J. C. Knollin of Gerth-Knollin Advertising Agency, who has been associated with this effort from the beginning, is already engaged in preparation of plans for the extention of the publicity features which are a part of the program.

Gas companies contributing to the 1939 campaign are Coast Counties Gas and Electric Company, Pacific Gas and Electric Company, San Joaquin Light and Power Corporation, Santa Maria Gas Company, Southern California Gas Company and Southern Counties Gas Company. The 1939 budget totals $39,500.

Christmas "Trees" Lighted by Gas

GAS-LIGHTED outdoor Christmas trees!

There's one in Bakersfield, Calif., and duplicates are planned in Merced, Madera and Selma.

Bakersfield's gas-lighted "tree," the model for those in the other communities, is made entirely of ordinary gas pipes, painted green and draped with shredded asbestos to give the effect of snow. It is twelve feet tall and has fifty-eight branches that range in length from four feet to a few inches. At the top is a large five-pointed star made of sheet iron and covered with bronze. From the branches hang dozens of non-inflammable Yule ornaments.

At the end of each branch and on each point of the star are gas burners in the shape of candles—sixty-three altogether. From them flare five-inch tongues of blue flame tinged with yellow and the sight is so beautiful and unusual that nightly it attracts several hundred spectators from all parts of the city and the surrounding countryside.

This novel Christmas tree was designed and built by W. F. Tyler, gas superintendent in Bakersfield, with the aid of three members of his staff—Ernest Rosenberg, Clarence Wooden and Ernest Bond.

—P. G. & E. Progress.

Gas Refrigerators Boast New Improvements

GREATER beauty in cabinet styling, an improvement in the method of air-cooling that provides better refrigeration performance than ever before, and an aluminum ice-cube grid that makes it easier to obtain ice cubes, are the outstanding new features of the 1939 Servel Electrolux refrigerator, according to an announcement by George S. Jones, Jr., vice-president and general sales manager of Servel, Inc.

"An important factor in designing our new models was the fact that there is a growing swing toward gas as the 'all-purpose fuel' in the modern household," Mr. Jones stated. "Servel, Inc., recognizes the backing of the gas industry as a paramount factor in the increasing acceptance of gas refrigeration. Therefore, it has been the company's policy to maintain the popularity of Servel Electrolux by improving the product from year to year to keep pace with the demands for the best that there is in household refrigeration.

William H. Hodge Resigns

WILLIAM H. HODGE, former vice-president and manager of the sales and advertising division of Public Utility Engineering & Service Corp., has resigned as of December 31. He will enter private practice in Chicago on January 1 as counsel on public utility services.

Mr. Hodge is a past chairman of the former Publicity and Advertising Section of the American Gas Association and has long been active in public utility advertising circles.

Personnel Service

SERVICES OFFERED

Twenty years' experience has made it possible for me to accumulate knowledge that could be used to advantage by either a large or small organization. Can train, manage and direct **retail** and **wholesale** men. Will travel anywhere. Now employed by one of the largest retailers. Conversant in appliance business. **1250.**

Positive **meter man** with thorough knowledge of meters desires to make immediate connection. (35). Over eight years in last position; information gladly furnished. **1251.**

Junior engineer (25), good health, with one and a half years' of general oil refinery experience in maintenance and operations wishes change. Experience includes general labor, surveying, drafting, first aid practice, introduction to the operations of the crude and pressure stills, natural gasoline plant, treaters and boilerhouse. **1252.**

Valuation engineer desires position with operating company or group to handle continuing property records, allocation of costs to meet new Federal and State classifications of accounts and development of original costs; college graduate with varied experience; of late years have specialized mostly on natural gas valuations. **1253.**

A young man, graduate, wishes to be placed with a reliable firm. Diversified experience in **architectural draughtsmanship** includes architect's office, hollow metal window detailing, field measurements, foreman interior construction job, store fronts, interior display work and authentic antique reproductions of marble mantels. **1254.**

Intelligent, industrious young man with excellent technical training and several years' practical experience as distribution draftsman, estimating and **selling** all types of gas-heating equipment, warm air, steam and hot water, residential and commercial units. Successful sales record secured in highly competitive territory. **1255.**

Salesman—sixteen years' varied, intensive selling experience in responsible positions with three top-flight specialty manufacturers, contacting gas companies, jobbers and consumers. Traveled United States, widely acquainted with gas company officials. Excellent personal selling record. Organized and directed many sales operations. Outstanding talent is for successful sales promotion. College graduate. (42). **1256.**

SERVICES OFFERED

Domestic gas **appliance salesman** with successful record, now employed by a gas utility, is looking for a new opening with a utility, manufacturer or distributor. Can furnish strong recommendations. **1257.**

Public Utility Accountant, ambitious, ten years' practical experience including collegiate training in accountancy and costs. American, gentile, protestant, seeks bigger opportunity than present position. Fully acquainted with detailed routine of gas utility office and public utility regulations in New York, Pennsylvania and Ohio; creditable references (30). **1258.**

Public Relations, vice president of advertising agency, directing public relations for nationally-known corporation; former public utilities editor of financial daily; legal background; outstanding twelve-year record with large utilities; has faith in utilities' future; seeks opportunity to re-enter utility business with company. **1259.**

Creative Producer, specialist in home appliance, equipment and building field, strong on ideas and programs that stimulate sales, available for advertising, sales promotion, publicity service on salaried, part-time or fee basis, quality manufacturer or utility. Past six years editor leading business magazine. Aggressive, resourceful, excellent record. Married (35). **1260.**

Thoroughly experienced man with industrial and commercial gas **equipment manufacturer** desires change. Pacific Coast territory preferred. Excellent references. **1261.**

Would like to make a connection with **manufacturer** of gas burning equipment. Ten years' experience in the warm air heating field. Will travel, preferably the Southwest if possible. **1262.**

Graduate mechanical engineer. Nine years with public utility. Strong record in promoting and **selling industrial** use of **gas** and gas appliances. Recently completed three years active duty as Captain United States Army, construction officer of CCC camps and commanding officer of CCC companies. Capable as business administrator or departmental correlator. **1263.**

1939 Advisory Council

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Pres.—T. P. Pinckard, United Gas & Fuel Co., Hamilton, Ont.
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Empire State Gas and Electric Association
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Asst, Sec.—Jesse Blythe, 103 West High St., Jefferson City, Mo.

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